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ORIGINAL ARTICLES.

NON-TUBERCULAR INFLAMMATION OF THE SPINE.¹

By T. HALSTED MYERS, M.D.,
OF NEW YORK;

ATTENDING ORTHOPEDIC SURGEON TO ST. LUKE'S HOSPITAL; CONSULTING SURGEON TO THE NEW YORK ORTHOPEDIC DISPENSARY AND HOSPITAL; CONSULTING ORTHOPEDIC SURGEON TO ST. JOHN'S RIVERSIDE HOSPITAL, ETC.

SINCE the discovery of the bacillus of tuberculosis the tendency has been to ascribe to this source an increasing number of the inflammatory lesions of the spine until, at the present time, I think the pendulum has swung over too far in that direction and that now a considerable number of kyphoses are considered tubercular which are really the result of syphilitic or malignant diseases or due to some of the infectious diseases, or to traumatism. I wish to make this paper as practical as possible, so have aimed to contrast the non-tubercular lesions with those tubercular. The field to be covered is a very broad one, and while in almost every work on orthopedic surgery one hundred or more pages are usually devoted to Pott's disease alone, the non-tubercular lesions are barely mentioned. I shall consider very briefly each division and endeavor to give the histories of one or two typical cases in each.

The syphilitic lesions of the vertebrae present a special difficulty in diagnosis, more particularly those due to congenital syphilis, as in these a reliable history is often lacking. The relation of congenital syphilis to tuberculosis is not understood, though many believe there is some relationship, expressed, perhaps, by making the syphilitic offspring a more than usually favorable soil for tubercular infection. Moreover, there may, of course, be a mixed infection; a tuberculous subject may acquire syphilis, or *vice versa*.

Syphilitic lesions of the vertebrae are comparatively rare, but Dr. Matthias Nicoll has kindly looked over the literature of this subject for me and has found a good many cases reported by such men as Fournier,¹ Virchow, Michel,² Gross, Lancereaux, Neleton,³ Astley Cooper, Verneuil, Westphal,⁴ Koenig,⁵ Leyden,⁶ Jansinski,⁷ and others. In these cases lesions were found in every region of the column—cervical, dorsal, lumbar, and sacral, and

in every part of the vertebrae—in the bodies, intervertebral disks, transverse and articular processes, laminae and spines; in the ligaments and in the muscles adjacent; and also every variety of this inflammation—periostitis, rarefying and condensing osteitis, gummata, etc. The cervical region, however, seemed the most often attacked, and one writer thought this might be due to its proximity to the pharynx, which is so often the site of syphilitic lesions. I will relate very briefly the history of two patients I have treated.

Polish boy, twelve years of age; no tuberculosis in family. During the previous year he had been suffering from pain and stiffness of the neck. Motion in any direction was resisted, and he held his head in his hands continually. The head was inclined to the right shoulder and the chin rotated to the left. This deformity was so marked that the sternocleidomastoid muscle had been divided. When I first saw him, however, there was well-marked reflex muscular spasm and some induration about the upper cervical vertebrae, which were a little prominent and somewhat tender on pressure. In November, 1891, a spinal assistant brace, with chin piece, was applied to support and immobilize the head, and the relief from pain was marked. Pott's disease was the first diagnosis; later on (August, 1892) the boy developed lesions in both elbows, the left hip (January, 1894), and a typical syphilitic dactylitis. These symptoms were held in abeyance by specific treatment, but the boy was very irregular in attendance and the treatment, in consequence, was intermittent. When he omitted his iodid and mercury there was an increase of pain and swelling, or new lesions developed. He finally died with cerebral symptoms, about three years after his first examination. I make the diagnosis in this case from the absence of tubercular history, from the multiple lesions in a strong, healthy boy, several of them being periosteal; from the dactylitis, and the effect on all the lesions of antisiphilitic drugs.

A fat, rosy boy, four years old, whose general health was always excellent, without any history of injury, gradually developed a kyphosis at the eleventh dorsal vertebra. About the same time a dactylitis appeared of the first phalanx of the index-finger, which was typical: a fusiform swelling of the whole shaft, only slightly tender, with moderate induration of the skin, and some ulceration. Rapid improvement followed specific treatment, although no change had been effected in the ulcer under antiseptic treatment alone.

In this case there was no induration about the spine and very little pain. Weakness was a promi-

¹ Read at a general meeting of the New York Academy of Medicine, February 17, 1899.

nent symptom. The application of a spinal assistant brace relieved all symptoms referable to the spine. The development of the kyphosis was like that of tubercular disease. There was nothing in the local condition from which to make a diagnosis, but the dactylitis and the result of specific treatment established it. His family history also indicated more than a possibility of syphilis.

The following case was reported by Fournier (*Arch. der Dermat. et Syph.*, II., 1, p. 19, 1881).

Man, aged fifty-six, always well until three months ago, when he began to lose flesh and strength and is now hardly able to walk. Pain over kidneys and occasionally in lower extremities. Examination showed a sarcocele, evidently of syphilitic origin; ten subcutaneous gummata in different parts of the body, an ulcer of the thigh and toe, and marked atrophy of gluteal muscles. Antisyphilitic treatment affected only the local lesions, and he died cachectic in three months. The autopsy showed, also, cirrhosis of the liver, perihepatitis, cicatrices on the surface of the kidneys, and gummatous involvement of the left fourth lumbar nerve at its exit. The bodies of the third and fourth lumbar vertebrae were infiltrated with a caseous material; the intervertebral cartilage was also destroyed and the cavity filled with greenish-yellow pus. The posterior ligament was detached, reddened, and thickened over the vertebrae. In the center of the second lumbar vertebra was an empty cavity. The intervertebral disk between the fourth and fifth lumbar vertebrae was also infiltrated with pus and contained a caseous focus. Under the microscope the bodies of the third, fourth, and fifth lumbar vertebrae showed condensing osteitis, with purulent and caseous infiltration exactly as in gummatous osteitis.

Fournier considered the case syphilitic on account of the man's age, fifty-six, his fine physique, because the spinal lesions developed at the same time as the other undoubtedly syphilitic lesions, and because of the nature of the microscopical findings and the gummatous degeneration of the nerves in the region of the affected vertebrae.

Rheumatic inflammations are an interesting group in making a differential diagnosis. As the cause or causes of these conditions are still unknown we must divide the cases according to their clinical history and their gross pathology. By far the most common condition is rheumatoid arthritis, which is described as affecting the bones themselves as well as the other joint-structures, atrophy and absorption taking place under pressure and osteosclerosis occurring elsewhere. It is never accompanied by suppuration. It is a chronic progressive disease attended by aching pains, especially at night and in damp weather, which do not yield to treatment. The ribs are often involved. The cervical region of the spine seems to be the last affected.

Goldthwaite divides these cases into two classes

clinically. These he calls rheumatoid arthritis and osteoarthritis, which demand radically different treatment. The first is more acute and occurs early in life, as well as later. During the acute stage the joints, those which can be examined, show a spindle-shaped swelling which finally subsides, leaving the joint much atrophied and usually ankylosed. In these cases the joints should be manipulated after all acute symptoms have disappeared. The second class, called osteoarthritis, seems identical with what is usually called osteitis deformans. This is much more chronic, occurring only in middle life or old age, and is characterized by a proliferation of the articular cartilage, with the formation of nodes about the joints. Manipulation should not be practised in these cases as an injury or undue violence results in a more rapid development of the cartilage. It is this tendency which explains the impairment of function which so often results after comparatively simple injuries to a joint. Protection and immobilization are important in such cases. In them there is crepitation on motion from the eroded cartilages, and neuralgias, and paralysis caused by pressure on the nerves by the new bone formation.

I have seen a number of cases of what may be considered a third form of rheumatic joint-disease, which attacks chiefly the ligamentous structures, transforming them into bone, but leaving the bones and the intervertebral cartilages in a comparatively normal condition. The history of a previous attack of gonorrhea is not infrequently obtained in these cases.

At the December meeting of the Orthopedic Section of the Academy of Medicine Dr. A. M. Phelps presented a sagittal section of a spine which seems to belong to this category. The spine was perfectly rigid from the cervical vertebrae to the coccyx. The bones themselves appeared normal, not condensed, perhaps a little rarefied. The intervertebral disks also were normal, but all the ligaments were transformed into hard, shining bone. A dorsolumbar kyphosis replaced the normal curves, and the femur was ankylosed in a flexed position. This, of course, was a most extreme case, but the picture is not a unique one. The same lesion of a less-severe grade would present clinical symptoms closely resembling the caries sicca of adults—a slowly increasing, poorly defined deformity more disabling than painful, without suppuration, and without very acute symptoms, but obstinately progressive.

Through the kindness of Dr. Reeves of London I saw, last fall, a very good example of this condition, which he called fascial rheumatism, occurring in a man about thirty-six years of age, who had had syphilis at twenty-two years, gonorrhea at twenty-eight, was married at twenty-nine, and had three

children. When first brought to the Royal Orthopedic Hospital he was bent over so much that his head was on a level with his umbilicus. The treatment adopted included antirheumatic drugs, massage, and suspension. Under this method, when I saw him, the curvature had been reduced fully one-half, and he was improving daily. I cite this case as it seems to me that we should make every effort to secure ankylosis in the best possible position, if ankylosis is inevitable. Thus massage, suspension, and



Deformity in so-called fascial rheumatism.

bracing are distinctly indicated in addition to the constitutional remedies. Certainly in Mr. Reeves' case the result was most gratifying (see figure). As the amount of pain varies a great deal in these cases, it may be found that there is least pain where there is least motion; that the pain ceases when ankylosis is established.

I have had no experience with the so-called Paget's disease. This is principally seen in England and is a peculiar form of enlargement of the bones. There is no chemical change in them and

the disease seems to have no relation to syphilis, rheumatism, or tuberculosis. The tibia is generally first attacked, but later the bones of the skull and spine are also affected. It occurs late in life and is a rarefying osteitis, progressing more and more rapidly. The joints are not attacked and suppuration does not occur. Vague but not severe pains accompany it. Great bowing of the limbs and marked exaggeration of the normal spinal curves follow. The bones seem unable to withstand the superimposed weight. No treatment is of any avail. Dr. H. L. Taylor reported two cases a few years ago and appended an excellent bibliography.⁹

Malignant disease of the vertebræ is rare and often the diagnosis is made only at *post-mortem* examination. Carcinoma and sarcoma are present in about equal frequency. Both may be primary, but both usually are metastatic. I will briefly outline two cases I have seen. The history of the first, kindly furnished me by Drs. Briddon and Thacher, I have abstracted as follows:

F. G., twenty-eight years of age. Family history tubercular. Personal history negative. The patient was perfectly well until six months ago. He then noticed enlarged cervical glands. Two months later pain appeared in left hip, running down thigh to knee. This limb gradually lost power and he had to remain in bed. Of late the glands have enlarged and he has lost flesh and strength. Yesterday, while being moved in bed his right thigh was fractured. He is anemic and emaciated. Urine, sp. gr. 1028; alkaline, turbid, and contains casts, pus, and blood. All the cervical, axillary, brachial, inguinal, popliteal, and post-peritoneal glands are enlarged. Spleen large. Left limb in position of third stage of hip disease, with abnormal mobility of head of bone, and crepitus. Edema of both legs; blood showed hemoglobin seventy per cent. Red cells nearly normal; white cells not markedly increased. His temperature ten days later was 104.5° F. and large sloughing area developed over sacrum. He died three days later. The autopsy showed sarcomata of lymph-glands, liver, spleen, pancreas, and bones; chronic cystitis, adherent pleura, perisplenic abscess, and pyelitis. The lower lumbar vertebræ and upper part of sacrum and crest of right ilium were necrotic and bathed in greenish pus. Superficial necrotic spot in front of body of tenth dorsal vertebra. Sarcoma of left femur; fracture of right femur due to sarcoma.

In this case there was no mention of the lesion of the vertebræ nor of the spinal-cord symptoms save the bed sores.

The history of the second case was kindly given me by Dr. Norton.

Woman of forty-five years. Malignant tumor was removed from breast in May, 1896. Three months later a second, and in May, 1897, a third operation was necessary. In August, 1897, she began to have

what were considered rheumatic pains in the back, not sharply localized, but chiefly in the lower dorsal region. After three months weakness and numbness of the lower extremities were noted. Absolute motor paralysis followed in two weeks. There was no deformity of the spine, but some deep edema in the lower dorsal region and slight tenderness. A fairly marked girdle sensation was noted also. Below this muscular and tactile sense were diminished, as were the sensations of heat and cold. Pain sense absent. Increase of knee-jerk; occasional lightning pains down legs; sphincter paralysis, bed sores followed by rise of temperature. Death of the patient about five months after the vertebræ became involved.

When a primary malignant growth has been recognized, the occurrence of spinal symptoms would, of course, be traced to their proper source, as in this case, but when the inflammation of the spine is primary, or is overshadowed by more active symptoms, the diagnosis is not so readily made. The first of these cases was thought to be leukemia for some time, and the later symptoms were masked by the fracture.

Kyphosis was seen in only nine out of Dr. Amidon's twenty-four cases. The disease may occur at any age, but the average age is forty-five years. It may infiltrate the bodies, transverse processes, laminae and spines, or may occur externally on the sides of the vertebræ or ribs. The average length of life after the onset of vertebral symptoms, Amidon found to be eight months. Pain has been a prominent symptom in all these cases, motor paralysis less constant. The cachexia at times did not appear till late. The spinal nerves are often involved in the new growth. Sometimes there are small metastases in the neighborhood which assist in making the diagnosis. These cases are sometimes mistaken for sciatica, lumbago, or Pott's disease.

Hodenpyl,¹⁰ speaking of the association of malignant disease with tuberculosis, says that carcinoma may be grafted on an old tuberculosis, and a tubercular lesion may act as a predisposing cause in locating this deposit just as a traumatism might. Still more rarely a carcinomatous subject may become tubercular. The lesions are not antagonistic, but occur at different periods of life usually.

Hydatids have been found attacking the spine. Dr. Lloyd has given me notes on such a case. A diagnosis of multiple sarcomata had been previously made. Sharp pain existed in the lower lumbar region for two years before any tumor was seen. The tumors were removed nearly nine years after the onset of symptoms, which finally included girdle pain, partial sensory and quite complete motor paralysis below the eleventh dorsal segment, vasomotor disturbances, sphincter paralyses, cystitis, etc. Cysts

were found extending between the spines and transverse processes of the eighth and ninth dorsal vertebræ. The adjacent bone was eroded. Crevillier's first case of "paraplegia dolorosa" was caused by an intraspinal hydatid cyst.

Syringomyelia is another rare condition which must be mentioned. Howard Marsh¹¹ says that scoliosis of the spine, possibly due to an arthropathy of vertebral joints, has been observed in nearly half of the cases of syringomyelia, but he adds, this does not occur in locomotor ataxia.

Very recently¹² the *diplococcus intracellularis* has been isolated from the pus of an arthritis occurring in a case of cerebrospinal meningitis. This condition used to be considered an arthropathy and suggests the importance of bacteriologic examinations in such cases.

Gonorrheal affections of the spine are exceedingly rare. In one series of 119 cases of gonorrheal rheumatism reported the spine was not involved at all. In another series of 116 cases, reported by Nolan,¹³ only two cases of arthritis of the vertebræ occurred, and in these other joints were also affected. One patient was cured, but the other passed from observation before a cure could be obtained. I have seen but one such case, as follows:

B. D., twenty-seven years of age. Good family history. Three years ago had gonorrhea. Six weeks after its onset he had pain in the spine, both knees, and nearly all the joints. He made a good recovery from this attack. Ten weeks ago he had a second attack of gonorrhea, and for eight weeks he has had pain in the lumbar region of the spine and in the right hip, especially on motion and at night. His general health is not now very good. His spine is very rigid and painful on pressure in the lower dorsal and lumbar regions. No pain anteriorly; slight general kyphosis of the affected region. Unfortunately this patient was lost sight of after the first examination.

The histories of these cases are, therefore, very imperfect, as well as few in number. They seem to show, however, that the affection runs a similar course in the spinal articulation as that observed in other joints. The recurrent attacks are more apt than the original inflammation to leave the affected joints ankylosed. As has been mentioned, the cases of "fascial rheumatism" often give a history of an antecedent gonorrhea.

The "typhoid spine" is now pretty well recognized. Dr. Gibney has especially contributed to our knowledge of this condition. It is supposed to be an inflammation of the periosteum or fibrous structures of the spine. There is acute pain on the slightest movement at first; also tenderness. There is little rise of temperature as a rule, and none of

the cases affecting the spine have gone on to abscess formation. Some slight injury may be the localizing cause. The patient is usually attacked shortly after the subsidence of the fever and recovery may be rapid or delayed for eight or ten months.

Many cases of periostitis and caries after typhoid fever are reported and the typhoid bacillus has been found living in one of these foci as long as seven years after the onset of the disease. The paper on the bone lesions following typhoid fever by Parsons¹⁴ of the Johns Hopkins Hospital is the most complete bacteriological study we have thus far. He found the typhoid bacilli only in some of the typhoid nodes, while in others this bacillus was associated with the staphylococcus pyogenes aureus, and once with the staphylococcus pyogenes citreus. He concluded that the typhoid bacillus alone was capable of producing suppuration. As this bacillus is very generally present in the bone-marrow the question is why there are not more cases of bone lesion. Professor Welch remarks that months and years after typhoid there occur cases of periostitis and osteomyelitis due to the typhoid bacillus.

A typhoid node on the tibia or ribs may become swollen, tender, red, and hot, and apparently be on the point of rupture, and then subside again for months, only to repeat the cycle perhaps several times. Parsons suggests that the typhoid spine is either due to such nodes or it may be a simple neurosis. I have never heard of abscesses connected with the vertebræ in a case of typhoid spine, which seems to me rather singular in view of the fact that there is so little tendency for these nodes to subside permanently in other situations. After one or two exacerbations they usually are opened and the typhoid bacilli have been found in them years after the fever has subsided. Partial operations do not cure these nodes; they should be radically excised.

Under the somewhat indefinite term of infectious inflammations might properly be included some of the rheumatic inflammations, the typhoid and gonorrheal, which I have already spoken of, but I now wish to refer only to those of probably pyemic origin which follow scarlet fever, tonsillitis, etc. The lesion is, I think, a periostitis, or an arthritis of some of the vertebral articulations. The germs in these cases become active in the depraved condition of health during, or immediately following these diseases, and generally attack the cervical spine, probably by direct transmission from the throat lesions. Moullin thinks these pyemic conditions have little tendency to become diffuse and that the necrotic sequestra are small if they are formed at all.

I will give the history of the two cases which I think belong to this class.

E. H., three and a half years old; good family history; no traumatism. One and one-half years ago she was "croupy" for two nights. Her neck became stiff and the head took a wry-neck position. Some swelling and tenderness under left ear. Family physician said there was no throat trouble. The deformity disappeared in one week, and all motions of the head were free. Six months later another similar "croupy" attack for one night. Some deformity occurred, persisting for one week. She was then well until September, 1897, when, after a third "croupy" attack, her head became inclined toward the right shoulder with chin rotated toward the left. There was no tension of the sternocleidomastoid muscle on the right side, nor any swelling. No kyphosis; nothing seen in throat. The head was held quite rigidly in this position by reflex muscular spasm. A spinal assistant brace with chin piece was applied and within ten days the head was straight and the range of motion greatly increased. The child is fat and rosy and does not look at all tubercular. (Since writing the above I have learned that this child developed bronchitis and died in four days with symptoms of meningitis.)

R. C., aged seven years; no phthisis in family. Patient was a fat rosy girl. In June, 1897, suddenly developed high fever and sore throat. Next day head was inclined to the right. At night she had pain in the back and right side of her head. After two months she held her head better, but continued to have a little fever for two months longer. A month later, September, 1897, right otorrhea for two days. She had now a marked wry-neck, the contraction being chiefly in the scaleni and deeper muscles. Rotation of head to right impossible; to left, free. Held her head in her hands to prevent jarring. Spinal assistant and chin piece applied with marked and immediate relief of pain and some improvement in position. The head, one month later, February, 1898, was nearly straight. Motions somewhat restricted, but much less so. No swelling; no kyphosis. Continuing this treatment head is now, January, 1899, still slightly rotated to the left and inclined to the right shoulder, but there is no pain, no reflex spasm, and the disease is apparently cured. General condition excellent.

These two cases represent a rather large class. The absence of tubercular history and very healthy appearance of the children, but especially the mode of onset and the rapid improvement are points in the diagnosis. The deformity depends upon the location of the lesion of course and would be the same if the cases were tubercular.

I have seen several cases of traumatic osteitis in which I had some difficulty in excluding Pott's disease. If there are such cases, especially if there are any considerable number of them, it is time they should receive more attention than has been given them thus far. Of course there are many cases of traumatism of the spine in which the diagnosis is clear. Evidently there has been a dislocation or a

fracture of the vertebra. The cord, perhaps, has been more or less severely injured also, and the ensuing paralysis may obscure the symptoms due to the lesion of the bone itself. The clinical picture, however, bears no resemblance to a case of Pott's disease. Then there is a very large class of cases in which the traumatism is followed within a few days or weeks by symptoms of Pott's disease, and which the subsequent history proves to be this disease, where, in other words, the tubercle bacilli have infected the site of the injury. I shall not refer to either of these classes.

The cases which I wish to call to your attention are those in which the traumatism is followed by such symptoms or by such deformity as is commonly found in Pott's disease, and yet which are proven by the subsequent history not to be tubercular. Injuries of the vertebrae are usually the result of indirect violence. Of course there are numerous instances of kicks, blows upon the back, falls against projecting objects, etc., but the great majority are the result of falls which bend the head or trunk forcibly in some direction. The cervical and lumbar vertebrae are most vulnerable, as the upper ten dorsal vertebrae are ably protected and solidified by the ribs. Where a rigid part of the spine joins a less rigid part there seems to be special liability to injury from these bendings, that is, the cervical region and the eleventh and twelfth dorsal at the lower end of the thorax, and the fifth lumbar adjoining the sacrum. These remarks do not apply so well to very young children as to adults, as I have tried twice to produce a fracture or dislocation in the bodies of children a year old by forcible anterior flexions and failed. None of the cases which I have observed has been in a very young child and most of them have been in adults. I will give the histories of a few cases to illustrate the point I wish to make.

D. S., eight years old. February 7, 1890. Good family history. Perfectly well until injury. Fell down seven steps striking head on floor. After four hours in bed he went about again complaining of headache, stiff neck, and pain in right shoulder. Examination on sixth day showed slight prominence of fifth and sixth cervical spine, and a dorsal curve to left. Drooping of right shoulder; swelling above right scapula. Slight limitation of flexion and a rotation of head to left. No spinal-cord symptoms. Dr. Shaffer also saw the patient and thought as I did, that the boy was in need of mechanical support. Three weeks later the pain had disappeared with most of the limitation of motion and some of the deformity. He wore the spinal assistant and chin piece less than three months. Spine then straight, motion of head free; no pain, and kyphosis less evident. No further symptoms.

M. B., fourteen years old. Diving in surf injured

neck, and a wry-neck position was soon noticed. Whether it occurred at the time of the accident or not was not known. He had, however, no mechanical treatment until I saw him nearly a year later. Then the head was rotated to the left and inclined toward the left shoulder. Motions of the head were limited and painful. General health good. Spinal assistant and chin piece were worn for a year, with fifty per cent. improvement in position, and cessation of all pain.

The question at first in both these cases, when I saw them some time after the injury, was whether the limitation in motion was due to reflex spasm or to a purely mechanical cause. There was mechanical resistance surely, but was the additional pain on motion and resistance, voluntary or involuntary? The proper treatment was evidently protection, whether there was a simple inflammation of the periosteum or bone, or a tubercular process, but it was not so easy to give a reliable prognosis to the anxious parents. As a matter of fact the first patient recovered perfectly in a few months, while the second required a year to secure a cure and then the deformity was but partially corrected.

While the dorsal region of the spine is the most frequent seat of Pott's disease, yet, theoretically, if a fracture occurs here the parts are so splinted anatomically that recovery without increase of deformity is to be expected unless a subsequent infection occurs with its attendant caries or necrosis. Besides the spine is so strongly protected here that any injury severe enough to fracture a transverse process or the body of the vertebra will injure the cord also, in all probability, and I do not recall a case and did not find one in the case-book of the New York Orthopedic Dispensary, which I examined, through the kindness of Dr. Shaffer, from 1890 to 1896, inclusive, in which a traumatism without spinal-cord lesion or subsequent tubercular infection was followed by kyphosis with the symptoms and history of a simple osteitis only.

By far the larger number of cases are found in the dorso-lumbar region. The following occurred in my private practice and caused me considerable uneasiness from time to time.

J. E., forty-two years of age. Good family and personal history. Fell from roof twenty-five feet, striking on feet, then bending forward. On admission to a hospital he was repeatedly examined and assured that his spine was not injured. He complained of a good deal of pain in the left gluteal region, and this continued from three to four weeks. His spine was examined repeatedly during the next three weeks but nothing was discovered to account for the weakness he felt in his back, which was so pronounced that he could not hold himself erect, either sitting or standing, without support. There was

slight tenderness over the dorsal and lumbar spine. A month after the accident I found a very slight kyphosis at the twelfth dorsal and first and second lumbar vertebrae. A spinal assistant was applied. The cure was perfected in four months though the patient was an adult. There could not have been any tubercular infection in this case.

G. D., a man twenty years old, more than six feet tall and weighing more than 200 pounds, slipped while carrying a weight and was thrown backward. He felt something give way in the lumbar region. He experienced a sensation of "pins and needles" in his feet for a short time but soon went to work on his farm as usual. Two months later he injured the same place, and again seven months later; this time he was in bed ten days. A fourth and fifth similar injury soon made his back so painful that he had to stay in bed.

I first saw him in September, 1889, and found a very slight kyphosis at the ninth and tenth dorsal vertebrae with some tenderness and a slight lordosis of the twelfth dorsal and first lumbar. The knee-jerks were exaggerated. Pain on motion, and some paresthesia and muscular twitchings of legs. Could walk only one or two steps. January, 1890, four months later, I saw him again at St. Luke's Hospital and put him to bed wearing a plaster-of-Paris jacket. July, 1893, three and one-half years later, he could walk half a mile; reflexes normal; no deformity found; no pain; tired readily; final brace applied. February, 1895, one and one-half years later, walks three miles; does farm work with crowbar, and the like. Splendid general health; fat and rosy; cured.

Notwithstanding the long duration of the local symptoms I do not believe this man had Pott's disease because (1) of his good family and personal history; (2) his splendid physique; (3) the absolute carelessness of his conduct which prevented his ever giving long-continued rest to the injured spine; (4) local condition. At the present time there is no deformity except a slight depression at the first lumbar vertebra. Motions of the spine are almost perfect. He has no pain and no disability.

Mr. C.; good family and personal history. When fourteen years old had a severe fall on back in a gymnasium. He was laid up for two or three days, and his back was very sore for a long time. During the following years, though he rowed, drove, etc., three or four times each year he would have severe pains in the dorsal and lumbar regions for a week or so, then they would gradually die away. When he was eighteen years old he noted a swelling in the right lumbar region which became large and tender, and he had chills. The abscess contained pus and blood. Three months after this was opened a spicule of bone was discharged. There was no spinal deformity at this time. After two months he was taken to St. Luke's Hospital, where a small kyphosis was noted and I applied a spinal assistant brace. The abscesses continued to discharge for three years, when a large sequestrum was discharged and the abscesses

promptly closed. The pain was always in the back, not anteriorly, but was at once relieved by the brace which he wore six years, though he was believed to have been cured two years before he discarded it. Examination February 16, 1898, six years after the brace was removed, shows the eleventh dorsal vertebra to be slightly prominent only because the twelfth dorsal and first lumbar are a little depressed. Anterior, posterior, and lateral motion about normal. Fat and well, weighs 175 pounds, and has a chest expansion of 5 inches. I do not consider this case tubercular, nor does Dr. Shaffer, who also saw the patient several times with me. The patient, however, was refused insurance by a life insurance company within the past four years because there is a rule against taking risks on persons with Pott's disease. This was done although the medical inspector highly recommended the risk. He was also refused by another life insurance company for the same reason within the last eighteen months. A third company, however, was willing to take the risk to any amount.

I have the histories of about a dozen other cases, but I will not weary you with them, but will say that a number of the subjects were in the large general hospitals for days and weeks even without a correct diagnosis having been made. This may be accounted for often from the fact that the deformity will frequently not appear until the patient assumes the upright position.

The lumbosacral juncture is another part of the spine which is especially liable to injury. I have notes on two cases of spondylolisthesis which had at some time been mistaken for Pott's disease, which I will very briefly cite on this account as well as to show the good effect of treatment.

Mrs. de C.; seen with Dr. P. H. Fitzhugh; thirty years of age, fell heavily when two years old, injuring the fifth lumbar vertebra. At eight years another severe fall; seven months in bed. Never well since. Wore imperfect supports for a time. A third fall a year ago, and was in bed two weeks at that time. Has been married twelve years and had two still births, with great increase of spinal pain, and increase of curvature after the last one, eighteen months ago. Examination shows well-marked deformities of spondylolisthesis. Can walk but a few steps. Cannot sit up, and has pain even when supine. Has a great deal of pain in abdomen, legs, and back. A spinal brace with abdominal belt was advised in order to give rest to the spine, and to relieve the lordosis. The result was immediate relief, and within a few months she could walk miles, sit out an entire performance at the theater, etc., which she had never before been able to do.

M. T., twenty-six years old, fell on some stones when six years old, striking back; never perfectly well again. At sixteen years could hardly walk at all on account of weariness in legs and tired feeling in back. Then was in hospital two years, gradually improving with quiet life. Now, after two

years of heavier work than she had been accustomed to, she presents herself for treatment on account of a marked tired feeling in her back. She can walk two miles, and can stand jars, but cannot stoop forward. Marked lordosis. Pubes prominent, and pelvis tilted upward. Spondylolisthesis. Spinal up-rights applied February 11, 1891, with marked relief of the tired feeling.

The explanation I would offer for these cases of traumatism of the spine simulating Pott's disease is as follows: a fracture in a long bone will require from six to eight weeks to become consolidated. Where the vertebræ are fractured and little or no injury is done to the cord there is local weakness and some tenderness, but often only a moderate amount of pain (that is, comparing it with that accompanying fractures of the long bones) and often no crepitus, so that the injury to the bone may escape notice. As a rule, therefore, a sufficiently long period of rest and protection is not enforced. Moreover, it is very difficult to keep these parts quiet on account of the small size of the bones themselves and the length of the body above and below the injured part. Probably non-union results. There may be no deformity at first on account of the many powerful ligaments and muscles holding the parts in place, but when the erect position is assumed the weight of the body will gradually produce a kyphosis or lordosis, as the case may be. Aside from the history of the accident the picture now presented is one of ordinary chronic osteitis and might easily be mistaken for Pott's disease. We have the characteristic deformity, the reflex spasm, and continuing pain and disability.

I cannot believe that tuberculosis occurs in the osseous system primarily. At the New York Foundling Hospital I made many autopsies when I was an interne there, in cases in which this looked possible, but always found enlarged bronchial or mesenteric glands also, showing the path by which the bacilli gained entrance to the system.

I do not think, either, that the presence of abscess and extrusion of bone prove an inflammation to be tubercular. I have seen several cases in which a severe traumatism of the spine was followed within a short time by abscess formation which did not appear tuberculous, both in the cervical and dorsolumbar region.

Tubercular lesions of the bone run a pretty definite, well-known course, and while no sharp lines can be drawn, I should be inclined to doubt the diagnosis of tubercular spondylitis if the cure were effected within one year.

Several practical points are suggested by this consideration of the non-tubercular lesions of the spine:

1. Syphilitic treatment should be pushed when

there is a possibility of this disease being present. The pain will be relieved and the progress and extension of the disease stopped generally; moreover, many very brilliant cures are recorded when the symptoms seem to be due to pressure on the cord or nerves from gummata, and periostitis.

2. Fractures should be more carefully protected and for a longer period to prevent occurrence of deformity and paralysis and to relieve pain and disability.

3. Rheumatoid arthritis can be rendered less deforming and less dangerous to life, therefore, by securing ankylosis in a good position, if ankylosis cannot be avoided.

4. From a medico-legal standpoint it is important to remember that not all chronic increasing kyphoses are tubercular, and, therefore, exorbitant damages should not be awarded in all such cases. We should also consider the beneficial effect on the mental complexion of the patient and his family of the recognition of this fact.

5. Life insurance should not be refused such subjects. Some of the companies have hard and fixed rules, such as the one referred to, that no risks should be taken on a person with Pott's disease. When a mistake in diagnosis can so readily be made, which would work to the applicant's disadvantage, it would seem most just to consider each case separately.

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AFRICAN BLACK-WATER FEVER.¹

By FRANKLIN PIERCE LYNCH, M.D.,

RESIDENT PHYSICIAN OF THE SANITARIUM OF THE AMERICAN BAPTIST MISSIONARY UNION, MUKIMVICA, CONGO ANGOLA, SOUTH-WEST AFRICA.

GEOGRAPHICALLY considered, the African black-water fever appears most frequently and in its most severe forms in the African tropics, following the foreigner as he enters the country from its western or eastern coasts. Although many places on the western coast have been occupied by foreign residents for more than a century, it is only in comparatively recent years that this peculiar form of fever

¹ Read before the New York Academy of Medicine, April 6, 1899.

has appeared. The writer of this paper was stationed on the Congo from 1893 to 1898; and on arrival found the black-water fever held in great dread and reported of frequent and fatal occurrence. Information of its symptoms and history was obtained from various residents, especially from one who had lived in the Congo region for twenty five years, but had never contracted the disease. He stated that during the first ten years of his residence in the lower Congo he had never seen a case or heard of that form of fever.

The purpose of this paper is to present briefly some points of clinical observation rather than a consideration of the various present theories of its cause and origin. The range of observation and experience was confined to the lower Congo and its immediate coast-line, in which the number of foreign residents, comprising traders, officials and missionaries, is limited to less than three hundred scattered over an area of one hundred miles. The disease is confined exclusively to the white population; and so is not known among the natives, neither has a case come under observation among the half-castes of the country. It prevails in the rainy or hot season, and not a single instance is recalled of an occurrence during the cold or dry season. The most marked and characteristic symptom is that from which it derives its English designation, African black-water fever, as the urine of the patient varies in color from that of a light claret to a deep porter appearance. So far as the histories of the patients under personal observation would indicate, the disease comes suddenly and without marked premonitory symptoms. The first indication of its presence is the changed condition of the urine. A test of temperature will give a record varying from 101° to 106° F., which as a rule responds readily to treatment. The fearful dread in which the disease is held renders the patient nervous and keenly apprehensive, as he has doubtless heard of or seen some one, seemingly as strong or of better constitution than himself, who has suddenly been stricken and died within two or three days. The expression is therefore anxious, the eyes often yellow and the skin dry and sallow. Vomiting is present and is sometimes depressingly severe, with bile in surprising quantities. Constipation has always been present; and with purgation and following rectal injections the evacuations are profuse and tar-like in color and consistency. The duration of the disease may extend from one to three days, and if there is no improvement by the third day the prognosis is fatal. Should suppression of the urine occur and continue unresponsive to treatment, the patient will sink into unconsciousness and pass away. The disease is comparatively painless, although pass-

ing reference may be made to a headache or a sense of heaviness with a sensation of soreness in the back and over the abdomen. The mind of the patient seems to be so absorbed in the condition of the urine that other matters are of but little interest. He may be much depressed, but delirium is rarely present. Apparent physical conditions do not seem a factor as a determining cause or predisposition toward an attack of the fever. A vigorous man will fall as readily a victim as one of delicate constitution, and each stands an equal chance of recovery.

In the lower Congo region the disease is found exclusively in those who have been two or more years in the country. A return to the Congo after a vacation in Europe will sometimes be followed by an attack. In a few instances, persons who have never had the fever on the Congo have had an attack on the homeward voyage or some time after arrival. A matter of note and interest is its rare occurrence among the women who have bravely entered the country, remaining in some instances from three to five years of continued residence. In most of the cases treated the patients had been of careless habits in the matter of exposure to the sun or rain, would rarely take needed medicine, and often with pronounced prejudice regarding quinin.

In the event of recovery, convalescence is remarkably rapid, and in a few days the patient may return to normal conditions and will experience a sense of general well-being and satisfaction with his surroundings. There is an occasional recurrence in one or two weeks, and in that event, the second attack may be more severe than the first. In each case of relapse under observation there was neglect of suggested precaution and of the continued use of quinin. Quinin would almost seem to be a specific for the disease, and its marked benefit as a prophylactic cannot be questioned. An instance is personally known to the writer, of a resident who after neglecting the use of quinin was taken with a severe form of black-water fever. Upon recovery he determined to use quinin with careful regularity, and has taken five grains of the bisulphate daily for at least ten years. He has been in England on furlough and back to his station and has never had a return of the fever. His last term of service extended over six years of continued residence (the usual term for the Congo is three years) and he has maintained good health during that exceptionally long period.

The treatment, which has been most satisfactory in results, must be prompt and persistent, though seemingly drastic. The conditions of the stomach are often difficult to control. In the early cases which came under my charge subnitrate of bismuth and bicarbonate of soda were used, but marked

benefit was obtained in the later cases by the prompt administration of mustard and water. This simple emetic cleared the stomach and the counter-irritation of the mustard seemed to have a decided sedative effect and left the stomach free for the first administration of medicine. The bismuth and soda were more satisfactory after the emetic. Prompt and free catharsis is indicated, which was obtained by compound cathartic tablets, crushed for ready assimilation, or the administration of calomel and jalap. The calomel is to be preferred in severe irritation of the stomach, as it will be retained even with severe retching. The dose of calomel was never more than 5 grains, but European physicians are reported as using 15 grains as a dose. A rectal injection of from one pint to one quart of warm water should immediately follow the administration of the cathartic and should be repeated twice a day until recovery. The patient should be stripped of all clothing and rolled in blankets and hot-water bottles applied to his back and feet. Rubber sheeting spread over the bed will be of great convenience and advantage when it is desired to change the patient from the blankets to the dry sheets, as the bed will then be perfectly dry. Diaphoretics should immediately follow the application of the hot-water bottles, and a dram of sweet spirits of niter in 8 ounces of hot water, sipped slowly, after which 20 grains of antipyrin should be given. In some cases the odor of the sweet spirits of niter suggests nausea, but firmness with the patient will generally insure its safe administration. A ready response will usually follow the treatment and within fifteen minutes or half an hour the patient will be in a profuse perspiration. He will find the confinement in the blankets irksome, but it is of the highest importance that he be kept in them until the temperature drops to normal or to 100° F. The time may vary from three to nine hours, but if the temperature can be reduced in that manner a returning rise of temperature is rare.

Digitalis is also indicated in the changed condition of the pulse and for its stimulating effect upon the kidneys. Hemostatics were used in the early cases, but without appreciable effect, so they were discontinued to save needless strain upon the sensitive stomach. As soon as the temperature begins to lower 15 grains of the bisulphate of quinin should be administered, and it is of the utmost importance that the patient be kept under the constant influence of that invaluable remedy until recovery. It is also advisable to continue the use of quinin in doses of from 3 to 5 grains every two or three days, and in some cases it should be given daily for a long time after convalescence. The form of administration must be determined by the condition of the stomach,

by the mouth, rectum or hypodermic injections, as the case may require. Diet is highly important and the individual needs of each patient will be evident. Alcoholic stimulants are rarely indicated, and should be employed, if ever, with extreme caution. Free purgation with rectal injections of warm water twice a day; diaphoresis, if possible, until the reduction of temperature, and the daily administration of quinin are the cardinal points in successful treatment. Prompt action and constant care with a firm but gentle command of the patient which will inspire confidence are also essential to successful results. In eighteen cases in which the treatment outlined was followed but one patient failed to recover.

Criticism has been offered on the evident lack of scientific investigation in reports of this disease. The conditions of life and the limited resources of a physician in the pioneer places in which the disease is found can scarcely be appreciated except by actual experience. The means of travel and the surroundings of the foreign resident are often most primitive, and the physician must rely completely upon his own resources without opportunity for professional assistance or consultation. He may have traveled all night in a canoe, and wearied with the trip, arrives at last to find the patient in a desperate condition. A trader rarely makes provision for sickness. An empty quinin bottle, an unwise investment of some former occupant of the station, and a bottle of fruit salts, a "cure in all climates and conditions," completes the usual list. The writer never found a suitable woolen blanket in a trading station. The physician must often be nurse and attendant, and with a disease so swift in its onset and severe in its progress and of such fatal possibilities, every energy must be bent to the paramount purpose of saving the life of the patient. Under such circumstances he has no opportunity for complacent and deliberate scientific investigation. No one can regret more than the physician upon whom rests the responsibilities of treatment of the disease the present lack of thorough knowledge of the etiology and pathology of African black-water fever. The present investigations are full of promise, and every fresh suggestion is of keen interest to the physician battling alone with the dread disease at the far outposts of progress.

A \$25,000 Fellowship.—Alvan R. Johnson, Esq., of Brooklyn has presented to the Trustees of the Long Island College Hospital securities worth \$25,000 for the endowment of a fellowship in the department of pathology, to be known as the Van Cott Fellowship, in honor of Dr. Joshua Van Cott, who will during his lifetime select the incumbent annually. The income will be about \$1250.

THE RELATIVE DEATH-RATES FROM CANCER AND CONSUMPTION.¹

By JOHN H. FRYOR, M.D.,
OF BUFFALO, N. Y.

It is a part of probability that many improbable things will happen.—Aristotle.

THE term consumption, when employed in this paper, refers to pulmonary tuberculosis only.

Recently considerable literature has appeared in medical journals, lay periodicals, and the daily newspapers concerning the death-rate from cancer in this State. It has been compared with consumption to show a relative gain which has surprised the profession and the public. Wild statements have been accepted without examination, and they have caused alarm, and given rise to opinions which are erroneous and misleading. One writer of eminence has repeatedly published statistical information, conclusions, and predictions with reference to the death-rate from cancer which are startling if true.

At this time special attention will be invited to two recent contributions: First, an article, entitled "A Further Study into the Frequency and Nature of Cancer," MEDICAL NEWS, April 1, 1899, and, second, "First Annual Report of the Director of the New York State Pathological Laboratory of the University of Buffalo," transmitted to the Legislature, January 26, 1899. This report to the Legislature is an official communication, and the following quotation explains the relations of the institution and the State: "Last year the Legislature appropriated \$10,000 to the Medical Department of the University of Buffalo for the purpose of equipping and maintaining a laboratory to be devoted to the study of the causes, mortality-rate, and treatment of cancer." In each article figures derived from the reports of the State Board of Health are given, and the increase of cancer during the last eleven years is offered in support of this remarkable conclusion: "A careful study of these tables permits one to make the following startling prophecy: If during the next ten years the relative death-rates are maintained we shall find that ten years from now, *vis.*, in 1909, there will be more deaths in New York State from cancer than from consumption, smallpox, and typhoid fever combined." The extraordinary nature of this prediction is appreciated, and italics are employed to emphasize its portentous meaning. Incredulity has led to a scrutiny of the data presented in proof of this assertion.

In the MEDICAL NEWS the following figures are published to show the mortality from cancer and consumption during the last eleven years, or twelve years inclusive: Deaths from cancer in New York State,

1887, 2363; from consumption, 1887, 11,609. "In 1898 there were 4456 deaths from cancer, and only 12,552 from consumption." The figures for 1898 are incorrect; they should be deaths from cancer, 4385; deaths from consumption, 12,979; a decrease of 71 for cancer, and an increase of 427 for consumption. Now to estimate the increase from 1887 to 1898, without any reference to yearly increase or averages, is manifestly inaccurate, but allowing that privilege, the gain in the death-rate from cancer is 85 per cent., and consumption 11.8 per cent. If fractions of percentage be dropped the gain of cancer over consumption is 77 per cent. for eleven years, or for twelve years, inclusive.

The sources of error due to the peculiarities displayed by disease and the influencing conditions are so numerous and glaringly apparent that one can place slight credence upon any estimate for future years. But if any one has sufficient interest to compute the probable increase in deaths from cancer according to the percentage given he will find that cancer must increase more than three times faster in the next ten years than it has in the last eleven years to destroy as many lives as consumption. "If the relative death-rates are maintained" cancer will destroy as many as consumption and typhoid fever in from forty to fifty years. I repeat, all such generalizations and predictions are unjustifiable scientifically, and only excite morbid interest and promote novel theories which mislead.

If any consideration of typhoid fever and smallpox be eliminated some confusion and misapprehension may be avoided. The dread disease smallpox caused one death in this State last year, and the very small percentage of deaths from typhoid fever in proportion to the number who suffer from that disease may lead to false views of its prevalence as compared with cancer. Perhaps the danger of any prognostication regarding the future conduct of a disease may be illustrated in passing by citing the death-rate from typhoid fever last year when it jumped up 469 over 1897, due largely to epidemics in military camps. Consumption increased its death-rate 338, and cancer 254, a gain of 503, which cancer must overcome at its average increase of 160 per year. In the report to the Legislature mentioned, tabulated figures prepared from the reports of the State Board of Health are furnished, and the principal part of the report devoted to mortality is employed to show the relative increase of cancer and decrease of consumption. Statistical Table VI., page 15, contains the estimated population for each death from these two diseases from 1887 to 1898. The deductions are based upon the whole increase again, not upon the average. To quote: "Thus,

¹ Read at a meeting of the Alumni Association of the University of Buffalo, April 25, 1899.

in 1887 1 person in every 2402 died of cancer, and 1 of every 499 of consumption. . . . The table also shows an increase (of deaths from cancer) of 40 per cent. during the eleven years tabulated." "In other words, in 1887 1 out of every 2400 died from cancer, in 1898 1 out of every 1500. The same table shows that the mortality-rate from consumption has shown a marked decrease." The figures given for 1898 are 1568 for cancer, and 544 for consumption. They are incorrect, and should be 1596 and 540, respectively, a decrease of 28 for cancer, and an increase of 4 for consumption. A consideration of these figures given in the statistical table leads the author to the alarming prediction in italics intended to show that the deaths from cancer will exceed those from the three diseases already mentioned. It will be found that an increase of 40 per cent. for the next ten years, even provided the death-rate from consumption remains the same, will yield the following result: Deaths from cancer, 6139; deaths from consumption, 13,000.

An estimate of the average death-rate to the population to equalize variations shows for eleven years: cancer, 1 death per 2210, and consumption, 1 death per 476. Thus consumption exhibits an average death-rate per year much higher than the figures given in the summary above. Consumption causes about 11 per cent. of all deaths. The percentage for each of the eleven years runs from 10.6 to 11 per cent. The deaths from cancer show an average gain of 1 per cent., an increase of 1.5 per cent. in 1898 over 1887. The number of deaths from cancer in 1898 is given as 3.7 per cent. of the total deaths for that year. The average increase of deaths from cancer during eleven years is 160 each year, and at the rate of increase for ten years the total number of deaths from that disease in 1909 would be 5985. Consumption increased its number of deaths on an average of 136 per year, and if the same ratio is maintained 14,839 will die from that disease in 1909.

This computation is introduced simply to illustrate a discrepancy in estimating results based upon vital statistics, and to show that the expected increase of cancer is exaggerated. Nor can it be fairly claimed that the death-rate from cancer increases progressively. By dividing a series of twelve years into two periods of six years, and estimating the increase it will be found to be very slight, and certain districts of the State show a tendency to preserve an unchanging death-rate, or a gradual decrease in rapidity of increase. The reports from New York City for thirty-one years, divided into three decades reveal an increase represented by 55, 73, and 39 per cent., and for the last five years, 23

per cent. Cancer is not the only disease characterized by a steadily increasing death-rate. Diseases of the urinary system, and particularly Bright's disease and pneumonia, have increased almost if not quite as fast, especially if considered in relation to mortality and the number affected. The fact that cancer is increasing is best illustrated by the advance in percentage of the death-rate in comparison with the general death-rate. However grave the outlook may be, there is no justification for the expected increase of more than 300 per cent. in ten years, when by the most liberal and questionable methods the past gain has been 85 per cent. in eleven years.

For some reason not explained by an examination of the mortuary returns the statement has repeatedly been made that a certain locality in New York State, of which Buffalo has been said to be the center, belongs to a distinct "cancer-belt," where cancer is prevalent to a remarkable degree. The belief in this myth has become quite widespread, and recently inquiries from a distance have been reaching physicians here. There seems to be no good reason why the rumor should go longer without a denial. It is doing the City of Buffalo no particular good, especially in view of its boasted low death-rate. The returns of deaths from cancer in the Lake Ontario and Western District, in which Buffalo is included, gives a death-rate of 61 per 100,000 for 1896 and 1898. This shows not only no increase per population, but a rate below the average for the State. The death-rate for Buffalo is 58 per 100,000, or below that of the district. It is also below that of other cities in different parts of the State. Compared with the State of Massachusetts, certainly far removed from any supposed "cancer-belt," and noted for the reliability of its vital statistics, it is found that the rate for that State in 1895 was 64 per 100,000, or 6 per 100,000 more than Buffalo. In Massachusetts the death-rate from cancer has almost trebled in forty years, and in Michigan is about three times as great as it was thirty-one years ago. In both States the increase is somewhat greater than in New York State in spite of the larger population.

There are possible sources of error which must be considered as bearing upon the death-rate and prevalence of cancer and consumption. The increase in reports of death from cancer may be accounted for to an indefinite extent by more complete and accurate returns, improvements in diagnosis, and added knowledge due to operative interference, particularly in the abdominal cavity. We must also bear in mind that an unknown number of patients come to large medical centers in this State and, dying, add to the mortuary records. Practically every

case of cancer is reported, because almost invariably fatal. On the other hand, many consumptives leave the State for other climates, and the deaths are unrecorded here. A certain unknown percentage recover, and at least 25 per cent. of autopsies reveal evidences of tuberculosis not fatal or healed. The difficulties in securing Sick, Industrial, and Life Insurance, and efforts to protect the family at times, is giving rise to evasion and false returns.

Surgical treatment of tuberculosis, which has improved remarkably in recent years, has lessened the number of consumptives by the eradication of foci of infection. Finally, the fact cannot be emphasized too strongly that consumption indicates an affection of one organ and tuberculosis of all other organs is not included in recent comparative death-rates. This is partial and misleading. If all the deaths from tuberculosis in the unclassified list, and the deaths in childhood, due to the same cause, were added, the disparity between the deaths from cancer and consumption already shown would be still further magnified.

Of late the assertion that consumption has materially decreased and steadily declined in New York State has been reiterated without any explanatory data of a broad or comprehensive character. It is now sixteen years since Koch's discovery of the cause of tuberculosis, and since new methods of prevention were suggested. The death-rate continued to advance numerically until 1887, then fluctuated until 1892, since which time it has remained stationary or has slightly declined. Since 1887 the average increase has been 136 for twelve years. In 1897 there was a marked decrease, and the enthusiasts made promising conjectures and attributed great results to so-called prevention. In 1898 there was an increase of 338, and 12,979 deaths, very near the 13,000 average again. Whenever a decrease has occurred it has not been general, and the slight diminution in recent years is largely due to a lower death-rate from the disease in New York City, particularly among females.

In the districts of the State, all save the maritime, which includes New York City, the number of deaths per 100,000 population has increased. The percentage of all deaths, and the number per 1000 deaths, has remained practically the same save in 1897, and it increased again in 1898. In 1893 the number of deaths per 1000 from all causes was 105.94; average for six years 108.13; and in 1898, 108.13. Consumption causes as many deaths, but not as many in proportion to the population. The explanation is to be found in the recent great diminution in the general death-rate, and consumption simply shares with other zymotic diseases in the

prolongation of life and greater freedom from disease. It claims its proportion of the small death-rate as it has of the high, but its death-rate does not decrease so rapidly as the general death-rate.

The death-rate in New York has decreased twenty-two per cent. since 1888, and much more rapidly in some cities, *vis.*: Buffalo, whose death-rate last year was 12.25 per 1000, and that of the State, 18.10. Compared with a preventable disease, *i.e.*, scarlet fever, the difference is very plain, and with a disease where prevention and saving of life is combined, *i.e.*, diphtheria, the remarkable decrease of the latter and the curious constancy of consumption are most striking. To repeat, the number of deaths from all causes in proportion to the population has undergone a most remarkable decrease in the last ten years. The population has steadily increased from 5,800,000 in 1888 to 7,000,000 in 1898, while the death-rate has declined. There are fewer deaths from all causes, but consumption continues to claim its proportion. Numerically, the death-rate may vary or diminish during certain periods, but tuberculosis in all forms is still responsible for one-seventh of the deaths in this State.

When considered in relation to all the facts, the claim that consumption has markedly decreased is exaggerated, and the statement that the disease has been checked in its spread is more accurate and trustworthy. Furthermore, this limiting of its ravages cannot be ascribed except in small part to any special efforts in the way of prevention. The wave of sanitary improvement has probably accomplished the result by removing the cause, increasing vital resistance, and eradicating vicious and, therefore, encouraging environments and conditions. Modern ideas of prevention have never been put in practice in this State except to a slight extent. What changes their adoption might produce are unknown. Unless new methods of dealing with the disease are introduced there is no sufficient justification for the pleasing prophecy so often heard that the scourge will pause in its awful work. That its death-rate will diminish in the next ten years enough to allow cancer to overtake it, obviously calls for no comment. The fatal disease, cancer, appears to be increasing with such rapidity that the mere mention of the fact is enough to cause apprehension and alarm and to stimulate a desire to learn more of the cause and nature of the malady. Any comparison is unnecessary, and is apt to prove harmful by confusing the public mind and distracting attention from problems of the day pressing for solution.

The State has made a commendable move in establishing a State Laboratory in which investigations relating to the cause and nature of cancer may

be pursued. If appropriations are liberal enough to allow of a proper prosecution of the work, something may be accomplished. As yet no proof has been established of its infectious nature or parasitic origin, but many signs point in that direction, and the fact that those qualified to undertake the investigation are pursuing the matter with scientific zeal makes the future outlook somewhat more hopeful. How near or how far we are from the time when more may be known of cancer cannot at present be conjectured. We know the cause of consumption and the conditions which promote the disease. We know that it is infectious and largely preventable. We know that a percentage, varying from 60 to 75 per cent. of early cases can be cured, and the remainder improved by proper treatment. Therefore, an immense and unnecessary loss of life, and an appalling and unnecessary amount of suffering prevails in this State because of stupid, antiquated, inhuman, and wasteful methods of dealing with the consumptive. How long the death-rate from consumption will remain a disgrace to the medical profession and the State we cannot know, but the time will not be shortened by the recent tendency to exaggerate the importance of one disease and belittle the dangers from another. The possibility of the death-rate of cancer exceeding that of consumption in 1909 on the present ratio of increase can only be realized by some unlooked for and very unusual occurrence. Undoubtedly the number of deaths from consumption can be greatly decreased by prevention and proper care, and if rational methods of relief are ever adopted the time may come when the wide difference between the mortality-rate from cancer and consumption may be greatly diminished or obliterated.

COD-LIVER OIL.¹

By THOMAS E. McARDLE, M.D.,
OF WASHINGTON, D. C.;
PROFESSOR OF MINOR SURGERY, MEDICAL DEPARTMENT, CO-
LUMBIA UNIVERSITY;
AND
W. H. WILEY, M.D., Ph.D.,
OF WASHINGTON, D. C.;
CHIEF OF THE CHEMICAL DIVISION, U. S. AGRICULTURAL DEPART-
MENT.

THREE years ago I read a paper before this Society on the therapeutic value of cod-liver oil. It was my purpose to impress upon the members the true value of this agent in certain diseases, fearing they might have forgotten this old remedy in the continued search for novelties. During the time which has elapsed since the reading of that paper I have given much thought to the study of this subject, and I have become more convinced than ever that it is one of the most valuable remedies of the

Materia Medica for the treatment of a large number of the so-called wasting diseases of children, and also for those peculiar conditions of adults embraced under the common term anemia. In other words, whenever the blood is deficient in the red blood-corpuscles, when the body weight is below normal, and when every function seems deranged, we have in cod-liver oil a remedy of great value.

The potency of the remedy, however, lies in its proper use. One of the principal efforts of my first paper was directed toward proving the necessity of using the whole oil. In order to prove of value, it might as well be understood first as last that the whole oil must be used. Indeed, we prescribe cod-liver oil mainly because of the fat it contains. Whilst the so-called active principles of alkaloids may have some therapeutic power, I am fully convinced, after having given this subject most careful study for a long time, that the fat in cod-liver oil is its chief factor in furthering the processes of nutrition. We must not lose sight of the fact, however, that the combination which Nature has formed so perfectly between this particular fat and its accompanying alkaloids gives a peculiar and ideal value to this oil which no other fat possesses. To separate the so-called active principles from the oil is, in my opinion, to destroy the efficacy of both. It is the whole oil we need. It is the whole oil we must have.

When I had the honor of addressing this Society before on this subject, I contended that we oftentimes make a mistake in our method of prescribing cod-liver oil. I said that usually too large a dose was given. Consequently it was not assimilated, and served only to add nausea and indigestion to the other ills already present. I hold that 10 or 20 drops three times a day are the largest doses we dare prescribe in many cases. These doses may be gradually increased as the patients continue to improve. Frequently it is impossible to get an individual to take the plain oil. For this reason and also because of its easier digestion, this remedy is usually given in the form of an emulsion.

We all know that the making of an emulsion prepares the oil for digestion; indeed, some say that it is already digested when it is in the form of an emulsion. When placed in the position of deciding as to whether we will write a prescription in detail for a certain amount of cod-liver oil to be made into an emulsion or of merely ordering one of the prepared emulsions to be found in the drug-stores, I prefer the latter, because of the difficulty in finding pharmacists of sufficient skill to prepare a suitable and satisfactory emulsion. When persons have made emulsions exclusively for years they acquire a certain skill which only comes from such experience.

But it is absolutely essential that we know what we are prescribing. That is the principal objection to prescribing the preparations offered for sale. We know so little of what their constituents are. It is for the purpose of finding out what these preparations really contain that Professor Wiley and I entered upon the study of this subject. Professor Wiley has found that for the most part the claims set forth by the proprietors have been justified

¹Read before the Medical Society of the District of Columbia, May 17, 1899.

by his examinations. The profession as well as the laity are indebted to Dr. Wiley for entering upon this work so heartily, and we owe him much for the skill, industry, and perseverance with which he has undertaken a thorough study of five or six of the preparations which are best known to us, either through representatives or through personal experience. He places before us, for reference, analyses of some of the more important preparations of cod-liver oil, and from these we can select the one to our liking.

Preparations of this kind are mostly proprietary, and their exact composition is not given on the label. There are two typical groups of these compounds. The first group consists of the true emulsion containing an approximately fifty-per-cent. content by volume of the pure oil, together with the emulsifying reagent, some glycerole, a flavoring extract usually dissolved in alcohol, and other less important ingredients. Scott's Emulsion, Ozomulsion, and Parke, Davis & Co.'s Egg Emulsion are typical members of this group. It was not the object of the analysis to determine all these bodies, but only the total non-volatile constituents, the proportion of oil, and of alcohol. The non-volatile constituents, that is, those bodies left after heating to constant weight in a vacuum at the temperature of boiling water varied from fifty-eight per cent. to sixty-four per cent. in the samples analyzed.

The purified oil in every case responded to the color tests for cod-liver oil. The proportion of oil in these samples, as has already been said, is approximately half their volume. In the samples analyzed the oil by volume varied from a little over forty per cent. to a little over forty-six per cent. The quantity of alcohol was very small in Scott's Emulsion, and ranged from this to a little over nine per cent. by volume in other samples of the first type. It is evident that this small quantity of alcohol is derived from its use as a solvent in some of the other ingredients of the emulsion. No quantitative determinations were made of the glycerole, hypophosphites, essential or flavoring oils, or other minor ingredients of the compounds.

The second type of preparations includes those in which the oily part of the cod-liver oil is removed, and the greater part of the nitrogenous and other constituents thereof is held in solution as a tincture. The principle on which the preparation of these compounds rests is that the nitrogenous bases, lecithenes, and other non-oily constituents of cod-liver oil constitute its really active principles. It is evident from the above considerations that these compounds contain considerable quantities of alcohol and only small quantities of non-volatile solids and oil. The analytical data fully corroborate this statement. Typical preparations of this class are found in Vinol, Wampole's Extract, and Stearn's Wine of Cod-Liver Oil. In these the analytical data reveal the fact that the non-volatile matter ranges from five per cent. to ten per cent.; the oil from 1.01 per cent. to 0.86 per cent.; and the alcohol from nineteen per cent. to twenty-four per cent.

The above analytical data are offered in the hope that the physician prescribing these remedies and tonics may

know their general character, and thus be guided in choosing wisely those forms which are best suited to the needs of his patients.

Having noticed in some of the pharmaceutical journals statements regarding the occurrence of morphin in Scott's Emulsion, I deemed it advisable to examine the samples for this ingredient, for the profession should certainly be informed on this subject. Accordingly, two samples of 50 grams each, from a bottle of Scott's Emulsion, bought in the open market, were secured and treated as follows: Into one sample 10 milligrams of morphin, as a fine powder, were added, and the whole mass thoroughly stirred until an intimate mixture was secured. The two samples were then subjected to exactly the same treatment for the separation of morphin from the organic matter. The method followed was strictly that recommended by Wormley on page 492 and following, in his work entitled "Micro-Chemistry of Poisons." It is not necessary here to give a résumé of that method, since any one desiring to practice it can find it described in full in the place mentioned. The residues, according to the method of Wormley, were tested with two of the characteristic reagents for morphin, namely, nitric acid and ferric chlorid. In each case a brilliant reaction characteristic for morphin was secured in the residue from the sample to which the morphin had been added. In the other sample not the faintest trace of the reaction for morphin could be detected. These parallel tests show convincingly that the commercial sample contains no morphin.

CLINICAL MEMORANDUM.

EIGHT CASES OF TOADSTOOL POISONING.¹

BY WILLIAM MCD. STRUBLE, M.D.,
OF TRENTON, N. J.

CASE I.—H. G., an adult, on October 16, 1898, ate freely of supposed mushrooms at 8 A.M., again at noon, and at 4 P.M. At 5 P.M. he began to vomit. He supposed this to be due to acute indigestion from overeating as he had had several such attacks before. About 10 P.M. the vomiting became so severe that he sent for me as I had prescribed for him before for a similar trouble. I also concluded his trouble to be due to acute indigestion and prescribed accordingly. About an hour later I was again summoned as he was no better. I now found several other members of the family sick, and having made more careful inquiries, found that all who had eaten of the so-called mushrooms were sick and the one who had not eaten of them was the only well one, and concluded the sickness must be due to a poisonous form of the fungus as the symptoms were too severe for a simple indigestion.

H. G. was now vomiting a large amount of watery mucus. There was no food in the vomitus, his stomach having been emptied by his previous vomiting which began at 5 P.M., nine hours after the first ingestion of the poison. Every few minutes he would vomit a mass of stringy mucus, so tenacious that it had to be whipped from his lips. He did not complain of pain, but the

¹Read before the Mercer County, New Jersey, Medical Society.

nausea was so pronounced that I gave him a hypodermic injection of morphin and atropin, applied a mustard plaster over the epigastrium and ordered him to bed. This seemed to quiet him, and with the exception of an attack of retching every fifteen or twenty minutes, he was comfortable for about two hours, when he began to complain of being cold. His temperature was normal, but the skin felt cold; there was no sweating. His heart was quite weak, 110 per minute, and I, therefore, gave him a hypodermic injection of strychnin, $\frac{1}{30}$ of a grain, followed half an hour by $\frac{1}{100}$ of a grain of atropin. This made him feel more comfortable, his pulse became stronger, and he dozed, with occasional waking and retching spells, until morning.

The following morning he felt comfortable but was weak. His pulse was 110, but of better volume than during the night. He was given iced champagne and white of egg in water at short intervals, with a mixture containing bismuth subnitrate and spirits of chloroform. These he retained about half the time. He was also given occasional hypodermic injections of atropin or strychnin as the pulse became weak. Toward night he seemed decidedly better, retained nearly all he was allowed to take into the stomach but complained of great thirst, and a burning in the esophagus and pharynx, and wanted large amounts of fluid, but was perfectly conscious, and seemed satisfied when it was explained to him the reason he could only receive very small quantities. His pulse was of good volume, 100 to the minute, but he was very restless. He had had no morphin during the day so was ordered a 1-grain opium suppository at 10 P.M. He rested quietly the first part of the night, though he slept very little. He had occasional retching spells, but not severe enough to cause much exhaustion. Later in the night he became very restless. About 6 A.M., forty-four hours after the ingestion of the poison, he became pulseless. The heart sounds were very weak, 130, he felt cold, his temperature falling to 96.5° F., but he was perfectly conscious.

At this time serous diarrhea developed for the first time. At first the movements were voluntary but later became involuntary. The passages were quite frequent but of very small amount. This continued up to the time of his death. He passed very little urine, but this was probably due to the amount of fluid vomited, and the very small quantities taken into the system. Hypodermics of atropin, $\frac{1}{100}$ of a grain, followed in a few minutes by strychnin, $\frac{1}{30}$ of a grain, hot applications, rectal injections of hot normal salt solution, and hot water bottles to the surface of the body, did not seem to produce any effect. These were repeated at short intervals during the day but he died about 4 P.M., fifty-four hours after the first meal of mushrooms.

CASE II.—Mrs. H. G., wife of the foregoing, 5 $\frac{1}{2}$ months pregnant, ate of the so-called mushrooms at 8, 12 and 4 P.M. of the same day. Fifteen hours after eating the first meal vomiting began, at first contents of stomach, later watery mucus, without pain or much depression for some hours.

On the morning of October 17th she was hardly able to

rise, but did not complain of pain. A few hours later her stomach began to retain albumen-water and iced champagne, her pulse improved and her condition seemed much more favorable. She appeared to be resting better than her husband who was extremely restless, while she could be roused only by an effort. At 7 A.M. on the 18th she had a very loose bowel movement which was followed by a very sharp depression of the heart. She nearly died before the nurse could get her from the commode to her bed. Her pulse was rapid, heart sounds almost imperceptible. Only a slight thready pulse could be felt at the wrist. Temperature normal. She did not complain of the cold as her husband did. Her heart did not respond to hypodermics of atropin and strychnin, and she died about forty-eight hours after the first meal of mushrooms.

CASE III.—C. G., aged six years. Amount eaten not known. He was sleeping quietly until 1 A.M., seventeen hours after the first meal, when he roused up, had a painless vomiting spell, voiding only a watery mucus. He was given warm water to encourage the vomiting, which soon stopped, and he dropped asleep. He awoke again in about one hour with another attack. This was repeated every one or two hours all night. In the morning his pulse continued good, but he was weak, depressed, and pale. Surface of body was cool, pulse 100, and of good volume. Some tendency to roll eyes upward. Vomiting stopped, retained albumen-water and iced champagne. Continued about the same through the day and early part of the following night. Later became cold and pulseless, and died from heart failure, without pain or vomiting, forty-eight hours after taking the first meal of mushrooms.

CASE IV.—Annie, servant in the G. family, ate about four tablespoonfuls of the mushrooms at 8 A.M. Began to vomit sixteen hours later. Had numerous vomiting attacks during the night. During the day retained about half the albumen-water and iced champagne given her. During the following evening and night pulse was small but fairly strong. Early on the morning of the 18th her bowels became loose, this being accompanied by severe depression of the heart. Pulse was rapid and weak, but she rallied in a few hours, responding nicely to the medication. Stomach continued irritable, bowels loose. Urine very scanty. She gradually improved during the four following days when she was up and about, and taking a fair amount of food.

CASE V.—Female child, two years old. Was given a little of the broth, but she did not like the taste and spat it out. At 2 A.M., eighteen hours later, was taken with vomiting. After half an hour the vomiting stopped. The next morning she was running about playing, occasionally vomiting. The third day, she had a looseness of the bowels which lasted about twenty-four hours.

CASE VI.—B. G., adult, ate for breakfast about two tablespoonfuls of broth from the mushrooms. Fourteen and one-half hours later he began vomiting. A hypodermic injection of morphin and atropin seemed to control the emesis, and although wakeful he was quiet through the night, with occasional retching spells. On the morning

of the 17th he complained of feeling weak, but retained nearly all the iced champagne and albumen-water given him. He continued in this condition until night when his bowels became loose, and through the night he had very frequent evacuations of a greenish-watery fluid. Urine scanty. About this time he became very thirsty, complaining of a burning of the tongue, pharynx, esophagus, and stomach, and in spite of orders took large quantities of fluids, which he vomited almost at once, but without pain. Toward morning his pulse became weak, and it was necessary to administer hypodermics of strychnin. This continued during the day. He retained a fair amount of champagne and albumen-water. The next day he was stronger and retained milk. He slowly regained his strength and on the fifth day was up and about. His bowels continued loose until this time, when the movements were formed but still contained some mucus.

CASE VII.—D. L., aged forty-seven years. This patient ate about four tablespoonfuls of mushrooms at about 4 P.M. At 2 A.M., ten hours later, he began to vomit. Vomiting was encouraged by the use of warm salt water, but was never very free. There was a constant desire to have an action of the bowels, but without result. He had no pain. The following day he retained iced champagne and albumen-water, but had occasional vomiting spells. Bowels were still irritable. He was restless through the following night, and on the morning of the 18th complained of cold and weakness. Pulse 120, soft and weak. Hypodermics of strychnin continued through the day. Complained much of thirst and burning in pharynx. Began to take milk, which he retained in small quantities, but he was very indiscreet and would take a large amount in defiance of orders, and in a few minutes would vomit it. At this time he passed a small quantity of dark red urine which was pronounced by the nurse as "possibly bloody." There was much difficulty in promoting a free action of the bowels in the case of this patient. He took several doses of magnesium sulphate and castor oil, and had rectal injections before it was considered that the action was free enough. He gradually improved, the stomach slowly became more retentive, the heart stronger, and he was dismissed from treatment on the ninth day.

CASE VIII.—H. G., aged eighteen years. Ate about 4 tablespoonfuls of the mushrooms at 9 A.M. Began to vomit at 10.30 P.M., 13 1/4 hours afterward. Her stomach was the most irritable of any of these patients, the vomiting of a frothy mucus continuing in spite of hypodermics of morphin and atropin to the limit of safety. She received during the night of the 16th 1 1/4 grains of morphin and 1/8 of a grain of atropin. She passed a very restless night, not sleeping any or responding to the treatment. During October 17th her stomach retained almost none of the iced champagne and albumen-water, and rejected the bismuth mixture at once. No sleep during this day or the following night. Very restless; pulse 120, full; face flushed, and she began to have signs of the physiological effect of the atropin. This was the only patient to show this, although the others received fully as much, and in some instances more. The atropin was discon-

tinued, and the strychnin only was given. The following morning the pulse became weaker, 120, and she complained of cold. A diarrhea of a serous character set in. Her stomach still rejected nearly all that was taken. Hypodermics of strychnin continued as required, according to the condition of the heart. Toward night the stomach was less irritable, and she retained a small amount of albumen-water and champagne. Temperature 100° F. She complained of considerable pain in the lower abdomen, which was probably due to her menstruation which was due, and began normally during the night. On the 19th she was still very restless but gradually improved. Bowels still too free and contained mucus, with occasional specks of blood. Urine scanty; no albumin. Heart stronger, less rapid, and of good volume. Her symptoms slowly improved, but her stomach continued irritable, and she was under treatment ten days. Her condition was the most serious of any of the patients that recovered, and she was apparently much worse than Mrs. G. until the severe attack of heart depression caused the death of that patient.

It will be seen from a comparison of these cases that the symptoms of poisoning were in all practically the same, *viz.*: A painless vomiting, coming on from nine to eighteen hours after the ingestion of the poison, which was very free and consisted of mucus and water. This was very evidently a centric vomiting, due to stimulation of the vomiting center in the medulla after absorption, as none of the symptoms seemed to be caused by the local effect of the fungus, there being no symptoms of irritation of the gastro-intestinal mucosa. The burning and dryness in the mouth, pharynx, and esophagus, were considered due to the atropin given. This vomiting continued for a number of hours, when heart weakness or depression began, with a resultant coldness of the surface. This heart depression was relieved in five cases by hypodermics of atropin and strychnin, but in three cases, while there was a response at first, later the patients died from heart failure, being cold and pulseless for some hours before death. With this cardiac depression there began a serous diarrhea. The movements, while frequent, were small in amount, and the condition did not seem to be severe enough to cause the intense, and in three of the cases, a fatal cardiac depression. It would seem that there was a simultaneous intestinal vasomotor paralysis, thus causing a serous leaking into the intestinal cavity. With this there was no sweating, showing no involvement of the cutaneous vasomotor system. In some instances the patients complained of the frequency of bowel movements, but nothing was given to stop this action, it being considered Nature's effort to rid the system of the poison, and was encouraged by salines, castor oil, and rectal injections. In no case was there any cerebral symptoms, or coma, as described as occurring in muscarine poisoning.

Mr. V. K. Chestnut of the United States Agricultural Department, Washington, D. C., and Mr. E. B. Sterling of this city, induced the man who sold the toadstools to this family to take them to the same spot and gather some more specimens of the same variety. These speci-

mens were also picked out from a number of other species by members of the family, thus doubly identifying the cause of the poisoning. This was the *Amanita phalloides*, or death-cup. Most cases of toadstool poisoning are due to the *amanita*. There are a number of varieties of this fungus, but only three or four are poisonous. There are two prominent poisonous varieties found here, the *Amanita muscaria*, or fly amanita, and the *Amanita phalloides*. The active principle of *Amanita muscaria* is muscarine, and the symptoms of its poisoning as given in Potter's "Materia Medica" are as follows:

"Muscarine is a powerful respiratory and cardiac depressant, paralyzing the respiratory center and arresting the heart in diastole by paralyzing its motor ganglia while stimulating its inhibitory apparatus. It lowers the arterial tension, produces profound salivation, lacrimation, and sweating, contracts the pulmonary vessels, causing intense dyspnea, and increases the intestinal, hepatic, and pancreatic secretions, and markedly diminishes the renal. It causes tetanic intestinal contractions, severe colic and purging, spasm of accommodation, and contraction of the pupil. It acts as an intoxicant on the cerebrum, producing vertigo, delirium, followed by sopor, with lowered reflexes, perhaps coma, and death."

It will be noticed that atropin is almost an exact physiological antagonist to muscarine in its effects on the heart, muscular spasms, sweating, salivation, pupil, and renal secretion, and may be considered a typical antidote.

The symptoms of poisoning by *Amanita muscaria*, as described by Dr. D. W. Prentiss of Washington, D. C., are as follows: "Symptoms usually begin in fifteen minutes to two hours after injection of the fungus: Colic, more or less violent, vomiting, diarrhea, contracted pupil, salivation, profuse sweating. With these are cerebral symptoms; the patient feels as if drunk and becomes violently excited; dimness of vision which may be followed by blindness; epileptoid convulsions and trismus; drowsiness with loss of reflexes; pulse slow and thread-like; respiration short and stertorous; death from progressive loss of heart power."

It will be seen that these symptoms do not at all correspond to those in the cases described, which, as they were so uniform in all the eight cases, may be taken as typical of *Amanita phalloides* poisoning, unless the fungi eaten were contaminated by other varieties, which, from the statements of the family does not seem likely. The cerebral effects, the salivation, sweating, and colic were all absent in these cases, and this seems to show that the poison is different in the two varieties and not the same, as is claimed by some.

Mr. V. K. Chestnut affirms that the poison of *A. phalloides* is not muscarine but a toxalbumen called *phallin*. He considers the symptoms of poisoning "due to a decomposition of the blood, the serum escaping from the blood-vessels into the alimentary canal, the whole system being rapidly drained of its vitality," and he gives the symptoms of phallin poisoning as abdominal pain, cramps, convulsions, and other tetanic spasms; pulse weak; nausea, vomiting, extreme diarrhea, rice-water discharges simulating cholera, and death from general as-

themia. These cramps of the legs and other convulsive symptoms may be due to the rapid drain of the fluids of the blood, and the symptoms present a typical picture of cholera, apparently due to an irritant or poison causing a vasomotor paralysis along the alimentary canal and a consequent pouring out of serum. My patients did not have this appearance; there was none of the sunken eyes, hollow temples, pinched nose, or the appearance as given by Tyson of "a wasted body, long immersed in the pickling-vat of a dissecting-room." In other words, my patients died from a failure of the heart and not from a draining away of the liquids of the body.

Again, as to the statement of decomposition of the corpuscles of the blood. As a typical disease in which this occurs may be mentioned yellow fever. Here the symptoms referable to this lesion—decomposition of the blood-corpuscles—are jaundice, black vomit, black and offensive stools, bleeding from the gums and mucous surfaces, and hematuria, these symptoms being due to the escape of the altered hemoglobin. None of my patients presented any of these symptoms, and it would seem as if a different poison had been described. The symptoms given by Mr. Chestnut so closely resemble those caused by muscarine that it would seem as if that action had been described and not the effects of *Amanita phalloides*.

In looking back over these cases the following points in regard to treatment suggest themselves to me: Having a history of *Amanita phalloides* poisoning (and the length of time before the beginning of the symptoms would almost diagnose the variety of the fungus) at once an attempt should be made toward free evacuation of the poison. Tannic acid as a chemical antidote is of no use. Vomiting should be encouraged until the stomach is empty, and the bowels should be cleaned out. This seemed impossible in my cases as the vomiting was so severe. Rectal injections do not reach high enough but should be urged. If I had another case I would put two or three drops of croton-oil on the tongue at the risk of increasing the irritation as the effects of the poison are so severe and so fatal; or hypodermic injections of magnesium sulphate may be tried in order to prevent any further absorption of the poison. Having accomplished this, morphin for the vomiting, strychnin and atropin to stimulate the heart, with possibly galvanism of the cervical sympathetic, and large subcutaneous injections of normal salt solution should be given.

THERAPEUTIC NOTES.

Hydrotherapy in Adult Pneumonia.—BARUCH ("Hydrotherapy") advocates the use of the chest compress. Three folds of old linen are measured to fit exactly the entire chest, from the clavicles to the umbilicus. To embrace the shoulders slits are cut which should meet above. Two such jackets and two pieces of closely woven thin flannel of the same shape, but an inch larger in all directions, should be provided and fitted. One of the linen compresses is rolled up, soaked in a basin of water at 60° F., and wrung out so that it remains quite damp without

dripping. The flannel is now spread upon an even surface and the wet compress is put upon it. Both are then rolled together half way. The patient, who must not be allowed to exert himself, is turned upon the left side. The compress is so placed upon the bed that the rolled part lies in close proximity to the left side and the lower edge of the left slit is under the left axilla. The patient is then gently turned upon his back and the compress is unrolled. Both edges are brought forward and made to envelope the chest snugly. The flannel cover, which has been allowed thus far to lie upon the bed, is then brought forward, and the whole is then secured by two safety-pins in front and one over each shoulder. The compress should be changed every half hour, unless the temperature is below 102.5° F., every hour unless the temperature is 99.5° F., when it should be discontinued. The compresses are thus applied in rotation, day and night, unless the patient sleeps. A compress should be thoroughly rinsed before it is rolled up for soaking. The temperature of the water should be lower than 60° F. should stupor, or muttering delirium, or cyanosis or bronchi blocked by secretions be present. The chest of such a patient should receive one or more dashes of colder water before the removal of each compress. Water at a higher temperature than 60° may be used if there is much jactitation, insomnia or excitability. Here the compress, moistened more thoroughly before application, may remain two hours, thus converting it into a soothing fomentation that is not relaxing like a poultice.

Treatment of Pleurisy.—Pain requires the use of morphin hypodermatically or by the mouth *pro re nata*, for the first few days. Poultices give relief in mild cases. Blisters should not be used, if at all, until febrile symptoms have practically disappeared. Effusion is not likely to be dissipated by digitalis and iodid of potash; sodium salicylate in full doses (with from 2 to 3 grains of caffeine citrate added to each dose if the heart action is weak) will be found more effectual. Do not aspirate during the acute stage unless the symptoms are urgent; inflamed surfaces would thus be brought together, with adhesion and increased irritation resulting. If possible, wait until the second or third week before aspirating. Irrigation by submersion in a bath at a uniform temperature of 100° F. is advocated in empyema. Any antiseptic may be put into the water, e.g., saturated solution of boric acid, which is, however, expensive. Plain water, previously boiled, should answer. The entire body should be submerged for several minutes after expiration gives out clear water, from ten to twenty minutes. The pus will drop to the bottom of the tub. At first bathe daily, then every other day until recovery. At the stated temperature there will be no chilling.—"International Medical Annual," 1899.

Antitoxin in Diphtheria.—The syringe should invariably be sterilized immediately before being used. It is preferable to inject into the abdominal cellular tissue. (Jacobi, "Twentieth Century Practice of Medicine," vol. xvii.) According to the severity of the case 600, 1000, 1500 or 2000 units should be injected. The dose should be re-

peated unless the symptoms, both constitutional and local, be improved in from twelve to twenty-four hours. If necessary, patients two years old and over may be given at the earliest possible moment 2000 units, after from twelve to eighteen hours 2000 more units unless there is an improvement, and the same dose twenty-four hours after the second dose if there be still no improvement. Patients under two years may receive from 1000 to 1500 units. Early injection is necessary; the prognosis is impaired by procrastination. It is better in doubtful cases to inject even before the diagnosis is established. In addition to antitoxin, other treatment, both general and local, should be employed.

Treatment in Myxedema.—The condition of the kidneys, heart, skin, etc., must be carefully considered (Anderson, in "Contributions to Clinical Medicine"). The patient should be kept in an equable temperature. The food should be nourishing. Strychnin, arsenic, and iron may be used separately or in combination. The hair should be shampooed daily for half an hour. Every three days in rotation diaphoresis should be promoted as follows: On the first day a vapor bath. On the second $\frac{1}{4}$ grain of pilocarpin hypodermically. On the third day a hot, electric bath for half an hour followed by vigorous friction. From time to time this diaphoretic treatment is omitted for a week. Thyroid extract should be given by the mouth, *not* subcutaneously. If the latter method is employed abscesses, with resulting constitutional symptoms, tonic spasm, loss of consciousness, etc., are apt to result.

The gland itself, may be taken, or a glycerin extract may be administered. But the most convenient form is that of the desiccated thyroid either as a powder, tablet, or in capsule, such as a number of firms now prepare. Two grains of the desiccated powdered thyroid prepared by Parke, Davis & Co. are equal to 5 grains of the fresh gland, the ordinary sheep's thyroid weighing about 24 grains. The dose of this preparation is about 1 grain; and this dose is gradually increased until about 6 grains a day are reached. Then we stop and watch the effect of the dose for some days. If we have not overdosed on the one hand or if, on the other, the patient is not improved, we further gradually increase the dose up to 15 grains (no more) of the dried glands daily in divided doses. Overdoses of the thyroid produce violent headache, feeble heart action, and sometimes diarrhea and vomiting. Should these symptoms appear we stop the use of the drug for several days and return to its use gradually. The patient should be kept in bed for a few days after treatment is begun. After apparent cure the thyroid gland must be taken indefinitely, either in minute daily doses or in full doses for several days at the end of three weeks or a month. The latter plan is said to be preferable although more disagreeable. The diet should be largely vegetable.

Uses of Hypnotism.—Hypnotism is as yet of little service to the physician (Church, in "Nervous and Mental Diseases," by Church and Peterson). Now and again a minor operation may be done under its influence, saving the slight risk of surgical anesthesia, or by its aid a fixed

idea may be removed and a delusion expelled. Under ordinary circumstances the number of susceptibles is so small that its general use is impossible. In hysteria, as elsewhere, it is a two-edged weapon, and the patient may emerge from hypnosis instituted for a minor difficulty and go into severe hysterical convulsions. One delusion may be removed, but another and more serious one of mind reading or undue influence may be implanted. For obvious reasons, women should never be hypnotized without reliable witnesses, and the public use of hypnotism can only appeal to the morbid. In this connection its power for harm is proven. There is no doubt that its frequent repetition is harmful to the individual. It tends to destroy self-reliance and to make patients imaginative, weak-minded, and neurasthenic. It has also a tendency to bring discredit upon its employer, and in most instances would better be substituted by measures of equal efficiency and less disadvantage. Suggestion, however, is a mighty aid to the physician, and, without producing hypnosis, positive and intelligent assertion can accomplish all that is likely to be done by hypnotism short of the somnambulistic stage.

Treatment of Rheumatism in Children.—For pain ammonium salicylate should be used largely diluted. If this cannot be borne, antipyrin, phenacetin or lactophenin in small doses may be given. To produce alkaline effect use calcium or magnesium hydroxids, *e.g.*, milk of magnesia. Rest in bed will help to prevent endocarditis (Braithwaite's "Retrospect," vol. 118).

Treatment of Influenza in Children.—("Cyclopedia of Diseases of Children," vol. v.). Rest in bed until convalescent is essential. The course of the primary infection cannot be shortened by medication. Distressing symptoms must be relieved and the strength must be sustained. At the outset a mild cathartic of calomel and soda should be given. This should be followed by a diaphoretic of spirits of nitrous ether and liquid Dover's powder. For headache, nerve symptoms, and muscular pains give phenacetin in 1-grain doses to a child two years old, repeated every hour for two or three doses. Codein may be added. For high fever use tepid baths. Quinin may be given throughout the disease in moderately full doses, unless there be marked gastro-enteric disturbance. For the cough, codein may be used during the first days; later cod-liver oil and creasote may be employed. Local treatment of the nose is essential. Seiler's solution, diluted three or four times, or a normal salt solution should be used to irrigate the nose and throat two or three times a day. Prostration is best met by alcohol or strychnin. Convalescence demands a careful tonic treatment. Change of climate hastens the return to health.

Treatment of Chlorosis with Dyspepsia.—For the form of chlorosis exhibiting anorexia, flatulence, and vomiting, contraindicating the ingestion of much food, THIBAUT of Angers recommends a strict milk-diet for days or several weeks. Solid food is then to be given continuously for some time, using only eggs, then white meat, and

boiled fish. Milk is continued, and coffee and wine are prescribed. No iron is administered until all gastric pain has disappeared. Small doses are then generally tolerated and induce rapid improvement. The protoxalate (gr. 2½) combined with the same amount of powdered rhubarb can be taken twice daily at mealtime in a cachet. If this disagrees, 3 grains of phosphate of soda should be taken at the same time, and hydrochloric acid prescribed after the meal. In case of intestinal sluggishness the following pill is useful:

℞ Ferri et potassii tartrat.	gr. xlv
Pulv. nucis vom.	gr. x
Pulv. fol. belladonnæ	gr. iiss
Pulv. aloes	gr. xv
Ext. gentian	q. s.

M. Ft. pil. No. XX. Sig. Two pills a day.

For Lead Colic.—

℞ Ext. belladonnæ alcohol.	gr. v
Ext. nucis vom.	gr. iiss
Ext. opii	gr. v
Pulv. radidis et	
Ext. glycyrrhizæ	q. s.

M. Ft. pil. No. XXX. Sig. One pill two or three times a day.—*Leyden*.

For Diarrhea in Children.—When the food is passed in a state of partial digestion, SIMON advises that the meat, cooked vegetables, and eggs, included in the child's dietary, be reduced to a pulp before feeding. He prescribes as follows:

℞ Tinct. nucis vom.	m. viii
Tinct. rhei	
Tinct. calumbæ } aa	m. xxx
Tinct. cinchonæ	m. lxxx.

M. Sig. Five to 10 drops in water or wine of cinchona before meals.

For Anorexia of Pregnancy.

℞ Pulv. rad. calumbæ	aa	℥ ss
Pulv. rad. zingiberis		
Fol. sennæ		3 i
Aq. bull.		Oi.

M. Ft. infus. Sig. A small glassful before each meal.

To Prevent Loss of Hair.—

℞ Acidi acetici	m. lxxv
Tinct. pilocarpi	
Tinct. cinchonæ } aa	3 vi
Tinct. rosmarini	
Rum	℥ iss
Aquæ	q. s. ad. 3 vi.

M. Sig. Rub into scalp.—*Brocq*.

It may be advisable to dilute further in case of a sensitive scalp.

For Nervous Headache and Hemicrania.—

℞ Methylene blue (Merck)	aa	gr. x.
Myristicæ		

M. Div. in pulv. No. VI. To be put up in capsules. Sig. Two or three capsules a day.—*Lewy*.

The headache may yield to one dose, or the patient may be relieved from subsequent attacks by several days' treatment.

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SATURDAY, MAY 27, 1899.

THE ROENTGEN-RAYS IN THORACIC DIAGNOSIS.

THE Röntgen-rays are steadily coming into more constant use by the great experts in physical diagnosis, in the recognition and differentiation of intrathoracic conditions. Last year at the meeting of the German Medical Congress Dr. Schott of Naueheim demonstrated by a series of most careful skiagrams that even our knowledge of so delicate a subject as heart dilatation could be greatly aided by this new diagnostic method. In the proceedings of this year's German Medical Congress, an abstract of which appeared recently in the MEDICAL NEWS, it will be seen that the distinguished heads of German clinics frequently turn to the X rays for help in conditions that were formerly supposed to be fully revealed by older methods of physical diagnosis.

In the diagnosis of aneurism practically all authorities are agreed that the Röntgen skiagrams are of the greatest service. In cases in which there are suspicious symptoms in the thorax, and especially if there is any, even the slightest, reason to suspect aneurism of the descending aorta the X-rays are a most reliable adjuvant.

There are heart conditions in which a series of skiagrams furnish information that is of the greatest value for prognostic as well as diagnostic purposes. This, to be sure, is the more exact and delicate side of the application of the Röntgen-rays, and one that requires special training, but the time spent in acquiring the technic for thoracic diagnosis cannot fail to be profitably expended—a fact that will become more and more apparent in the near future.

ENGLAND'S INEBRIATE ACT OF 1898.

THE passage of a new Vaccination Act by the British Parliament, and the heated discussions as to the preventive value of vaccination carried on by physicians and members of antivaccination leagues, have quite obscured another British law which may lead in time to far more important measures than compulsory vaccination or its neglect. The law in question enables a judge to commit to a suitable institution a man or woman who has been four times within a year arrested for drunkenness, or who has while intoxicated performed a crime of a certain degree. In the latter case his commitment for drunkenness does not relieve him of punishment for the crime done. Such detention in a reformatory shall be for an indefinite period, not exceeding three years.

This act went into effect January 1st, and it is still too soon to say what the effect of it will be. The recognition of drunkenness as a cause for the removal of a man from association with his fellows is a new and important departure in law. Theoretically a man who becomes intoxicated periodically is wanting in self control. A man who while drunk commits serious crimes is dangerous to society. But whether the greatest good to the greatest number will be brought about by the detention of such persons in special institutions will depend not a little on the ability of such detention to cure the tendency to drunkenness. At any rate, this classification of drunkenness with insanity will help to educate public opinion as to its real nature, a lesson which is needed still in both England and America, though perhaps more in the Old Country.

SPECIFIC TREATMENT FOR TUBERCULOSIS.

THE New York County Medical Society, at its recent meeting, reported in our columns this week,

discussed the subject of adjuvants or auxiliaries to the climatic treatment of pulmonary consumption. It is evident that specialists in the treatment of this dread disease are still hopeful that some specific pharmacal or biologic remedy for the affection will certainly be discovered. The hope is shared very generally, by the younger specialists at least, in Europe. The present writer remembers distinctly with what assurance Professor Lesser of Berlin, about a year ago, in a clinic on lupus vulgaris, spoke of his confident expectation that a specific for tuberculosis quite as powerful against the lesions of that disease as is mercury against syphilitic processes exists and only awaits discovery.

The prospect is an alluring one and certain recent tendencies in microbiology rather confirm the hope of its fulfilment. Syphilis is now very generally considered a microbic disease and it is conceded that at least the major part of the action of mercury in the disease is due to its antiparasitic or bactericidal character. Against the syphilitic germ mercury has a selective action, and this specific growth-inhibiting or prohibiting action is not without analogies in modern microbiology. Nitrate of silver has a corresponding action upon cultures of *aspergillus*. This fungus will not grow if to the culture-medium is added scarcely more than the minutest trace of the silver-salt. A larger proportion than is necessary to produce this inhibition of even such strong drugs as the mercurial preparations are readily dissolved in the serum and tissue juices of the human organism without disturbing the economy, and are actually thus held in solution during the giving of a mercurial course of medication.

On the other hand there are those who claim that the action of mercury in syphilis is not specific because bactericidal but because it is a tissue stimulant of the first rank. From their standpoint it is questionable whether we should look with any confidence to the prospect of a specific medicament. Even during the last twenty-five years, while therapeutic observations have supposedly been gathered with more care and judgment than ever before in medical history, a series of new remedies for phthisis have been triumphantly introduced, quite generally used for a time, and then given up or allowed to sink into innocuous desuetude. Even the remedy at present so universally prescribed in America, creosote,

has lost most of its popularity abroad. It is used very little in the foreign hospitals and clinics. Some time ago Eichhorst of Zürich, after a serious painstaking trial of it in his wards for more than two years, said that he could not persuade himself that he had ever seen any advantage accrue from its administration. In the last edition of his text-book, 1897, he recommends only ordinary tonic and stimulant treatment for tuberculosis.

The maxim, *primum non nocere*—be sure to do no harm—obtains very forcibly in the use of new drugs, and the slightest sign that a remedy is interfering with general nutrition by disturbing the appetite or the digestion, as is not infrequently the case with creosote, must be the signal for its withdrawal. Some of the newer remedies mentioned may prove, on further trial, to have specific virtues, meantime one thing is sure, that so long as they continue to bear the stamp of novelty the strong psychic element that enters into all novel therapy of tuberculosis will cause practically all cases primarily to improve under their administration. Due allowances must be made for the suggestive element. The local treatment of lesions whether tubercular or not of the nasopharynx and larynx, the endeavor to keep the digestive tract at its acme of healthfulness for nutritional purposes, respiratory exercises, and hydrotherapy, all these judiciously employed mollify the annoying symptoms, increase constitutional vigor, give tone to the general system, and encourage the hopefulness of the patient.

ECHOES AND NEWS.

Ambulances Sent to the Philippines.—Quartermaster-General Ludington has shipped to Manila fifty ambulances for use by the American troops.

A New Editor.—Dr. Emil Mayer of New York City has been appointed co-editor for America of the *International Centralblatt für Laryngologie und verwandte Wissenschaften*, of which Sir Felix Semon of London is editor-in-chief.

Laws as to "Faith Healers."—Commissioner William T. Jenkins of the New York City Health Board has conferred with counsel of the New York County Medical Society with a view to framing amendments to the law so that the faith-curists can be more promptly and successfully reached.

Tuberculosis Congress at Berlin.—The American delegate to the Tuberculosis Congress, Dr. Von Schweinitz

has arrived in Berlin. Baron Hoyl Zu Hoornhein, the National Liberal member of the Reichstag, donated on May 15th three million marks toward the tuberculosis asylum movement.

Professor Virchow on Disarmament.—Professor Virchow, who is not only an eminent physician, but who is also an intellectual leader of German liberalism, believes that disarmament will sooner or later be realized. He considers that the realization will come slowly, for the age we are now living in is little favorable to humane ideas, and public opinion is weak, almost decrepid.

The Penalty for Food Adulteration in France—Alphonse Karr's once famous epigram "I poison the grocer—guillotine; the grocer poisons me—ten francs" has been outgrown, according to *Food and Sanitation*, for, besides paying his ten francs, the grocer now has to post in two places in his shop large placards announcing the fact that he has been convicted of food adulteration. These interesting souvenirs are kept in place for many months.

The Utility of Gargling.—A German physician has made some experiments to determine the value of gargling. The velum, a portion of the tongue and the tonsils were dusted with wheat flour and a gargle in which iodine was mixed with glycerin was used by the patient. It was found after gargling that the velum and the tongue exhibited the blue color of the reaction on the starch, but the flour on the tonsils was neither colored nor washed away.

New Woman's Hospital.—The Woman's Hospital at Forty-ninth street and Lexington Avenue, New York City, is to be torn down and to be replaced by a six-story building of the French Renaissance style. It will be of granite and is designed to accommodate 200 patients. There will be five large wards. The operating-room will be the largest in New York. Six hundred thousand dollars will be expended on the building and more than a million upon its equipment.

The Spallanzani Centenary.—On May 15th in Reggio Emilia, Italy, the one hundredth anniversary of the death of Lazzaro Spallanzani was celebrated by a grand *festa*. Spallanzani was a strenuous opponent in his day of the theory of spontaneous generation, defending biogenesis against such men as Buffon. He was expert in the use of the microscope and was the first to demonstrate the phenomena of the circulation in warm-blooded animals. His researches on the egg of the chick called attention to the fact of how much there might be found of embryological importance in this simple, easily procurable material.

Sunshine and Rain in Europe.—According to a recent report issued by the French Bureau of Agriculture, at 78 Rue de Varennes, Paris, Spain and not Italy should have the adjective "sunny" placed before it. On the average, it is said, Spain enjoys about 3000 hours of sunshine a year, while Italy has 2300. France has almost as much sunshine as Italy, her figures being 2200. Germany has at her disposal no more than 1700 hours; while England, the land of fogs, has to get along with 1400, less than half

of Spain's amount. The average fall of rain in England is, however, greater than that of any European country.

University of Michigan Medical Department.—The annual commencement of the University of Michigan will take place on June 22d. Besides the usual ante-commencement ceremonies, the medical department will have a special program for its friends and the alumni, an unusual number of whom have signified their intention of being on hand. All the laboratories will be open on the 19th, 20th, and 21st, demonstrations will be made on special subjects in anatomy, histology, pathological anatomy, pharmacology, bacteriology, and medical electricity, and clinics will be given in each clinical branch. These exercises will not interfere with those of the general program or with each other.

The American Electrotherapeutic Association.—The ninth annual meeting of this Association will be held in Washington, D.C., on September 19, 20, and 21, 1899, under the presidency of Dr. F. B. Bishop of Washington. Quite a number of papers of great scientific value have been promised and the Committee of Arrangements insures the members a very entertaining and pleasurable meeting. Aside from the sessions of the Association the Committee has completed arrangements for a trip to Mt. Vernon, one to Arlington, and several other social features. The headquarters of the Association will be at Willard's Hotel, where special rates will be given to members and their families during the meeting.

Increasing Duration of Life in Chicago.—The April Bulletin of the Chicago Board of Health makes the following startling announcement: "Measured by the average age at death of all who died in the City of Chicago thirty years ago and of those who died last year, the average duration of life in this city has more than doubled during a single generation. That is to say: In 1869 there were 6488 deaths recorded, with the age of each decedent given. The aggregate of the ages footed up 90,336 years, or an average of 13.9 years for every individual decedent, old and young. Last year there were 22,897 deaths similarly recorded, with an aggregate of 672,540 years of life, or an average age for each decedent of 29.4 years. This is an increase of 111.5 per cent.

Meat Extracts of Vile Origin.—The *Lancet* of April 22d comments upon revelations which have recently been made concerning the preparation of meat extracts from filthy material such as putrid livers and offal. Modern chemistry has unwittingly placed at the disposal of those who prepare meat extracts in this manner deodorizers and subtle flavoring materials which disguise the substances from which these extracts are made. The *Lancet* considers that a system of control should be established by the State so that extracts might from time to time be subjected to chemical and bacteriological examination. Possibly many cases of gastro-enteric disturbances, the etiology of which has not been discoverable, may have been due to the ptomains generated in such preparations.

The "Koch Lung Cure" Establishment.—President Murphy of the New York City Board of Health will investi-

gate the "Medical Council and Koch Lung Cure Establishment" at 48 West Twenty-second street. This concern advertises extensively in the German newspapers, professing to cure "catarrh, all pulmonary diseases, diseases of the eye and ear, diseases of women, tumors, and cancers." It has advertising offices in Chicago, Boston, and Philadelphia. Complaint has been made by a woman whose husband was dying of consumption that a bottle had been given this patient, which, the doctor told him, cost \$9 in Germany, and which, upon analysis, was found to contain three minims of chloroform to two ounces of water, and to have a market value, including the bottle, of 9 cents.

The New York State Board of Charities—Inspector of Almshouses Henry D. Kerr, was detailed on May 15th by the State Board of Charities to act as deputy superintendent of State and alien poor in New York City and vicinity. The incorporation of the Society for the Relief of Incurable Cancer in New York City has been disapproved by the Board, the proposed incorporators not having shown to its satisfaction the desirability of the establishment of such an institution. Robert W. Hebbard the secretary of the board, has been authorized to represent the President, William Rhinelander Stewart, during the latter's absence in Europe, in the preliminary work of arranging, in conjunction with a representative of the Comptroller, for the classification of positions in the State charitable institutions and the grading of salaries of their officers and employees.

International Congress of Gynecology and Obstetrics.—The third International Congress will be held at Amsterdam, August 9, 1899. The leading questions for discussion will be the following: (1) The surgical treatment of fibromyoma. (2) The relative value of antiseptics and improved technic for the actual results in gynecological surgery. (3) The influence of posture on the form and dimensions of the pelvis. (4) The indications for Caesarian section compared with that for symphysiotomy, craniotomy, and premature induction of labor. Doyen, Howard Kelly, and Shauta will open the discussion of the first question; Bumm, Richelot, and Lawson Tait the second; Bonnaire, Pinzani, and Walcher the third; Leopold, Pinard, Pestalozza, and Fancourt Barnes, the fourth. Dr. J. D. Emmet, 91 Madison Avenue, New York, is the secretary for America.

An Army Vaccine Farm.—General Guy V. Henry and the medical officers serving under him are to be praised for their very efficient work in Puerto Rico. They have stamped out a threatened epidemic of smallpox, and have rendered that disease almost a nullity upon the Island. The surgeons put into operation a vaccine farm, produced their own vaccine, divided up the island into five districts, established vaccination stations in every village and city of any size, and vaccinated practically every Puerto Rican—some 850,000 people in all. The vaccination was practically compulsory, for the order was that people who were not vaccinated could not enter any public conveyance or public place. The population generally took very kindly to the measure. The cattle-owners on the

Island lent their cattle to the surgeons for the purpose of producing the virus required.

Society for the Abolition of Vivisection.—Some of the members of the Liverpool Antivivisection Society, considering that the English National Antivivisection Association is not radical enough in its aims or drastic enough in its program have formed a branch of the British Union for the Abolition of Vivisection. The first annual meeting of this branch has just been held and the chairman dilated at great length upon the peril to society that all and every part of the practice of vivisection had become. The speeches made by eminent men at the opening of Liverpool School of Tropical Diseases were referred to with disapproval and the Union's opposition to every form of experimentation on animals or to any arrangement between antivivisectionists and experimentors, even in the matter of giving hospital charity loudly proclaimed. The Liverpool correspondent of the *British Medical Journal* says that now that this society has thrown off the mask, it would be as well if it would style itself the Society for the Abolition of Medical Education.

Cancer Hospital in New York City.—A *propos* of a recent newspaper discussion, the directors of the New York Skin and Cancer Hospital have issued a statement designed by them to correct a wrong impression regarding the purposes and work of their institution that may have been made by the recently published appeals for funds to establish and support a home for cancer incurables. They declare that admittance to their clinics or general wards is in no case conditional solely on ability to pay, nor is a patient ever discharged for mere inability to pay. The Skin and Cancer Hospital is a free institution for the treatment of cancer as well as skin diseases. By far the greater number of the patients pay little or nothing for their board. There are no facilities, however, for receiving sufferers from cancer who are presumably or demonstrably not susceptible of cure or betterment. It is their especial purpose to pursue the scientific study of cancer with a view to removing the present deadline of incurability. Inoperable cases are objects of relief and study, and constitute a large number among the absolutely free patients. The hospital would cheerfully undertake the supplemental work of providing wards for incurable patients did their finances justify it in so doing. The directors point out that their institution is the proper organization through which to extend comfort to hopeless cases.

Obituary.—Dr. William H. McEnroe of 145 West Eighty-second street, New York, died suddenly at his home May 17th, of acute indigestion. He also suffered from heart trouble. Dr. McEnroe was apparently in good health, and before retiring at midnight ate luncheon. Shortly before 2 o'clock he became suddenly ill and died before medical aid could reach him. —Dr. Joseph W. Stickler of Orange, N. J., a leading lung specialist, died suddenly May 18th at the Fifth Avenue Hotel, New York, of heart disease. He was born in 1854 in Hoboken, and went to Orange in 1858.

He was graduated from the College of Physicians and Surgeons in 1879. Dr. Stickler took the only prize ever given by the New Jersey State Medical Society for the writing of an essay, the subject of which was "The Climatology and Diseases of Essex County." He was President of the Young Men's Christian Association of Orange for two years, and a member of a number of medical societies in New Jersey and New York. He leaves a wife and one child.—The body of Dr. Robert Storer Tracy, who had been missing since the night of April 1st, has been found in the Saranac River. He had incipient phthisis, and was an inmate of Dr. Trudeau's sanatorium in the Adirondacks. Dr. Tracy was a son of J. Evarts Tracy, Esq., of the law firm of Evarts, Choate & Beaman. He was twenty-seven years old, a graduate of Yale and of the College of Physicians and Surgeons of New York City, and had been an interne in the New York Hospital and in the Sloane Maternity Hospital.

English Tribute to Major-General Leonard Wood, M. D.—

In the MEDICAL NEWS of April 15th our London correspondent said that, now that the Sirdar has gone back, General Wood is decidedly the popular hero in England. A striking confirmation of this bit of news and of the opinion that General Wood's magnificent official success in other spheres was especially due to his medical training is afforded by an article in the succeeding week's number of the *British Medical Journal*. "The career," the writer says, "of Major-General Wood, the United States Volunteer Military Governor of the Province of Santiago de Cuba, is one of interest to members of the medical profession, as he is a conspicuous example of the special fitness for organizing an administrative work under new conditions which seems to be developed in a remarkable manner by medical training. * * * Perhaps more than any other man who played a prominent part in the war between Spain and the United States, General Wood has impressed his individuality on the minds of his countrymen as a strong man who can be trusted to do effectively whatever work may come in his way, whether it be treating a colic or governing a conquered province." The same authority characterizes his work at Santiago after the war was over in the words of a correspondent of *McClure's Magazine* as "the *tour de force* of a man of genius, for in the harder, more fundamental tasks that confronted him here General Wood had had no previous experience." This thorough-going appreciation of the work of our American medical hero cannot but be cordially welcome to members of the profession in this country.

Medical Department at Manila.—Surgeon-General Sternberg made public on May 13th a report by Major Henry Lippincott, Chief Surgeon at Manila, of the operations of the Medical Department in the Philippines, from February 4th to March 31st. With the former date began a prolonged series of engagements with the Filipinos, and from that time to March 31st, 182 United States soldiers were killed or died from wounds received in action. The number of wounded during this period not included in this number

was 847. It is noted that "the effect of the firing was marvelous on the sick," many men who were hardly considered well enough for duty, leaving the hospital for the firing line. The medical staff were prepared for all emergencies. The first-aid packages proved of the greatest possible value. "Litters, pouches, and medical and surgical chests were in readiness, easily prepared articles of food, stimulants, and water were on hand, and the ambulance company did excellent service." The signal corps, by putting the hospitals in communication with the troops at the front, made it possible to send supplies at a moment's notice. The hospitals were supplied with an abundance of everything essential, "which was simply astonishing when the great distance from the United States was taken into consideration." The Corregidor Hospital, which is used for convalescents, has been of great benefit. Cases of typhoid and malaria have done well there, but patients suffering from dysentery and diarrhea, though improved, have rarely been cured. Rheumatism is obstinate in the climate of the Philippines. The total number of cases of smallpox up to March 31st was 151; deaths 77. There were 85 cases of varioloid with no deaths. There is "every reason to hope for a cessation of smallpox." The food-supply has been good. Two hundred and fifty-six wounded Filipinos, among whom were four women, were received into the hospital up to March 31st. Of these forty-five, including one woman, died. "These people receive the best of care and treatment and seem to appreciate the efforts made in their behalf." Among the Filipino wounded suppuration is the rule, whereas, among our soldiers it is the exception. Many causes account for the condition in the former, the chief being infection before coming into the hands of our surgeons. They have, moreover, an inordinate propensity to tear off dressings and finger their wounds when opportunity offers."

CORRESPONDENCE.

THE PURSE-STRING METHOD FOR TONSILLAR HEMORRHAGE.

To the Editor of the MEDICAL NEWS.

DEAR SIR:—In your issue of May 20, 1899, page 619, my friend, Dr. Dawbarn, makes a passing criticism of mine (the matter has never even been alluded to in my lectures) the basis for an interesting exposition of his method of arresting obstinate tonsillar hemorrhage by means of a purse-string suture.

My first thought when reading the article was, Has the doctor ever seen a case of urgent, profuse, tonsillar hemorrhage?—probably, but it certainly was not the one that he describes, the only case, be it here said, in which he has practically demonstrated the application of his method for arresting hemorrhage.

A patient who *can* be anesthetized, deliberately placed in a recumbent position, with the bleeding tonsil uppermost, so that the blood obligingly and conveniently runs away by gravity from the surface that the operator wishes to see while he four times introduces, in a locality rather difficult of access, the needle, which places the constrict-

ing "purse-string" about the stump, is *not* a case of severe, profuse, tonsillar hemorrhage, such as I had in mind when I said, and now repeat, that I believe the "purse-string" method which certainly requires toleration, time, and deliberation, is impracticable, even impossible, of accomplishment in urgent cases.

Some years since I amputated with the bistoury a tough, hard, hypertrophied tonsil in an adult (the doctor is right in saying that these are the ugliest cases of bleeding—I add, *if* they do bleed, which is not certain). Immediately there was a profuse gush of blood—so rapid was its flow, so great its quantity, that the patient's fauces, pharynx, and mouth, quickly filled and refilled; the blood ran freely into his larynx and trachea, causing violent cough, which spattered blood widely, and dyspnea of such distressing grade that the strangling, half-suffocated and altogether frantic man fought me off wildly, and rushed about the room, gasping for breath, while throwing out mouthfuls of blood and more than once vomiting it in quantities.

To seize him by the hair, force him downward into a chair, shout for assistance to my dispensary colleagues, crowd open his mouth, despite his struggles, compress the tonsillar wound "between the forefinger on the stump and the thumb outside" and thus control the situation, was the work of but a few rapid, exciting moments. In a short time he became faint, fainted, and the bleeding, as is so often the case, then ceased, not to recur. Was this an instance where the "purse-string" method could have been adopted?

There are other cases, instances of moderate hemorrhage, so called "obstinate" cases, in which, from the nature of the wound alone, its location, its depth, and other complicating circumstances, I believe that a purse string suture would be useless in controlling the bleeding even if it could be applied, which I doubt in such cases; also I have found simpler measures than the "surgical suggestion" of Dr. Dawbarn (see description, page 620) to usually answer the purpose, quickly and efficiently.

Unfortunately for all, patient and physician, the bleeding tonsillar-stump is not always as conveniently and favorably shaped and located and as easily reached as in the diagrammatic sketch accompanying the article. The operation upon paper is ideal.

Yours truly,

GEORGE M. LEFFERTS, M.D.

212 MADISON AVENUE, NEW YORK,
May 23, 1899.

OUR LONDON LETTER.

[From Our Special Correspondent.]

COLONY FOR EPILEPTICS AT MANCHESTER—MILK FROM A SEWAGE-FARM—OPENING EXERCISES AT THE LONDON POLYCLINIC—REPLACING THE END OF A NOSE—AGAIN THE CANCER PARASITE—TAXATION OF THE COLLEGE OF SURGEON'S LIBRARY—ANGLO-AMERICAN HOSPITAL IN ROME.

LONDON, May 13, 1899.

THE example set by America in the Craig and Gallipolis colonies for epileptics has by no means been lost over

here. The method had long been advocated upon theoretic grounds, and just recently the local authorities of Manchester decided to establish a colony and purchased an admirably situated farm for the purpose. Now, however, comes the discouraging news that the municipal council of the neighboring city of Liverpool has blocked the whole scheme by objecting to such use of the ground chosen, on the plea that it will result in the contamination of their water-supply. Of course, if an interest of such vital and paramount importance is really involved the colony must at once seek another site, but it is a little difficult to see why the colony would be worse in this regard than any other farm now on the watershed, and also why such a serious infringement of Liverpool's plain rights could not have been noticed and protested against before the land was actually purchased by a public body. Indeed, when it is remembered that the feeling between the two cities is even livelier than that between Chicago and St. Louis, or Buffalo and Cleveland, one cannot suppress a half suspicion that personal jealousies may have something to do with this apparent hygienic sensitiveness.

Another local sanitary war which is attracting a good deal of attention, is raging near Aldershot. The sewage from the great military camp of instruction there is pumped upon a sewage-farm of the most approved modern type, which bears such enormous crops of ryegrass that there is difficulty in finding a market for it. To utilize this surplus product a dairy which should supply the camp with milk was established, but when this applied to the local Urban Council for a milk-permit, as required by law, that sapient body refused it on the ground that milk from grass grown on sewage-farms could not be healthy. This wise pronouncement, however, was found to have been inspired by the local dairymen, who have been driving a large and profitable trade with the camp, and who have now succeeded in actually getting the trumpery charge before Parliament and a solemn commission appointed to investigate their ridiculous claim. Sewage that has been split up and digested three times, first by the soil-bacteria, then by the grass, and finally by the cow, passed through three stomachs in fact, is about as dangerous as a homeopathic dilution of the thousandth potency.

The Prince of Wales has appointed as delegates to the Berlin Congress for the Prevention of Tuberculosis, Sir Herman Weber, Malcolm Morris, Alfred Hillier, and C. Rube.

The London Polyclinic was formally opened with a *conversazione*, on Monday evening, May 1st. The clinical lecture-rooms, library, reading-room, and laboratories were open for inspection, with a large display of pathological specimens, drawings and photographs, and were well filled with visitors all the evening. The clinical demonstrations three times a week have already begun, as have the formal lectures and practical courses. All members of the profession visiting London are cordially welcomed at the clinical demonstrations and to the use of the Information Bureau.

The successful conclusion of a rather unusual piece of surgery has just been demonstrated by the most conclusive of proofs, a photograph of the face of a man, the tip

of whose nose had been replaced and sutured after complete separation. The case was reported a couple of months ago in the *Lancet* by Dr. Abbot Anderson. The patient had been his own executioner by the famous "whittling-toward-yourself" stroke of his own knife, against which all good little boys are warned. Dr. Anderson fortunately arrived promptly, picked up the *dissectum membrum* and carefully adjusted and sutured it, with the result that the photograph shows an apparently perfect nose, upon which the line of union can scarcely be made out.

And again the cancer parasite is to the fore. Dr. William Russell appears in the *Lancet* with a triumphant "I told you so," to the effect that the "fuchsin bodies," discovered and described by him in cancerous growths several years ago are identical with the organisms of Plimmer, and were originally regarded by him as yeasts, but in deference to the then prevailing opinion were described as sporozoa. What makes this naive confession of unreliability the more amusing is that Plimmer himself has made the same *volte face* in the opposite direction, inasmuch as several of his plates are actually reproduced from a former paper, in which the organisms are described as protozoa (animals), under the frankly confessed influence of Metschnikoff, while he now regards them as saccaromycetes, under the influence of San Felice. It would really seem as if the final arbiter of questions medical, the level-headed, all round, family-physician, was justified in looking askance at reported discoveries of the cancer parasite, until its enthusiastic champions can agree not merely among themselves but *with* themselves for three years in succession whether it is a vegetable or an animal, and publish demonstrations free from such distressingly obvious taints of suggestion and expectation.

The appeal of the Royal College of Surgeons for relief from taxation on their magnificent museum and library on the ground, of course, that they are purely scientific collections, neither for profit nor for personal advantage, has been decided in a curious manner. The court held after careful deliberation that the museum was entitled to such exemption, but that the library, being for the personal advantage of the members, was not. A beautiful illustration of legal hair-splitting, for when it is remembered that under the legal requirements of a double qualification for practice, nearly two-thirds of the entire English profession are members of the college, the library becomes as public an institution as can well be found, to say nothing of the generous and courteous way in which it is placed at the service of visiting members of the profession from every part of the habitable globe.

The London medical press comments most favorably on the vigorous methods used in dealing with the small-pox scare at Laredo, Texas. They are particularly impressed by the use of regular troops, and warn the anti-vaccinationists against dependence upon "democracy" for relief from compulsion, as a democracy in which a majority of the people are in favor of protecting the community in this way is likely to have even less scruple in enforcing its decisions for its own good than an absolute monarchy.

It is proposed to establish an Anglo-American hospital in Rome and an organization, of which the British Ambassador, Sir George Bonham is president, has been formed for that purpose. Its object is simply to provide a place where visitors of both nations falling ill in Rome, that hot bed of disease, can obtain skilled nursing and the best of care. There is great need for such an institution, as the only resource at present is the convents, and the nuns, though kind and hospitable, are but little versed in modern methods of nursing, and rather resent any suggestions or trained assistance from without. Some \$3000 has been raised already, but it is anticipated that its support will require about \$1000 a year.

Not merely every dog has its day, but every insect as well, apparently. The despised and hated mosquito is in high honor just at present, and experts are hard at work devising foods upon which it may be kept alive. The most successful appear to be bananas and a mixture of equal parts of brown sugar and sherry. Which would appear to indicate that the mosquito's life though short is a merry one.

TRANSACTIONS OF FOREIGN SOCIETIES.

German.

ON THE DEVELOPMENT OF MILIARY TUBERCULOSIS—ACCIDENTS FOLLOWING THE DEEP INJECTION OF CORROSIVE SUBLIMATE—THE DECREASED MORTALITY IN HAMBURG FROM TUBERCULOSIS, AND SOME NEW INSTITUTIONS WHICH HAVE BEEN OPENED FOR THE TREATMENT OF INCIPIENT CASES.

At the meeting of the Berlin Medical Society, March 15th, BENDA read a report of original investigations into the spread of miliary tuberculosis, taking the ground that the rupture of a tubercle into a blood-vessel is the immediate occasion of such a dissemination. He asserted that he had observed three cases of ulcerative endocarditis which he would have passed unnoticed had he not been making this special investigation, and intimated that there are doubtless many others of a similar character which have not been noted. He also described in support of his theory the progress of tubercular ulcers of the stomach as observed by means of the gastroscope.

The paper was the subject of a sharp criticism by Virchow. He said that he had never seen a single case of ulcerative tuberculosis of the endocardium, and that while he was ready to admit that he might have overlooked some cases he thought it impossible that they had been relatively frequent since he had never found one. He also expressed his disapproval of the habit into which many of the younger men have fallen of speaking of what they have seen through the gastroscope and similar instruments in exactly the manner that they would do had the surfaces been spread out before them. Every one is entitled to his own opinion of the value of such examinations, but it is certainly inadvisable to let them stand in the balance over against the observations of an organ after death, for instance.

At a recent meeting of the Charité physicians, LESSER reported three cases of extensive swelling and gangrene which followed the injection of from 15 to 30 drops of a

1-per-cent. solution of corrosive sublimate. The patients were all under treatment for syphilis, and had shown that they were not especially susceptible to mercury, or to this method of its administration, since they had received many doses without accident. Suddenly there developed an enormous hematoma, followed in all three patients by gangrene so extensive that repair was not complete for several months. This accident in his opinion was not due to puncture of a vein, as the needle was always allowed to remain open for a moment before adjusting the syringe for injection to see if any blood came from it. Furthermore a vein could scarcely pour out so much blood in so short a time. An artery was probably traversed by the needle, its eye passing clear though both walls, so that no blood could escape until the needle was withdrawn. While this was a rare accident it showed the risk that there is in deep injections, of whatever character. This risk can be greatly lessened by making the injections into the subcutaneous fat; it is to avoid the pain which often follows such injections that the needle is thrust into the muscles. All of the three patients were women.

At the Medical Union of Hamburg, March 21st, REINCKE showed that the mortality from tuberculosis in that city has fallen greatly since 1884. This improvement he ascribed to improved hygienic surroundings, better food, better dwellings, etc. He warned against a relaxation of effort on the part of the medical profession, as the aim ought to be, not merely to increase the resisting power of the well individual, but to cure every sick person or at least to treat him so that he shall not infect others. To obtain these results it is desirable that tuberculous patients shall be treated in institutions especially provided for them.

DEUCKE and RUMPEL described an institution of this character which has recently been opened near Hamburg. It was built by private capital on condition that the city conduct it for a period of years. It lies 200 feet above the Elbe, and has its own grounds, including a grove. One hundred patients can be accommodated. The usual charge is fifty cents a day, or less. It is especially intended for incipient cases in which the diagnosis is based upon a sputum examination, while physical signs are absent. The effect of treatment upon a patient at this stage presumably in the first attack, gives a valuable indication of the course the disease is likely to pursue in future attacks. Patients with fever, early hemoptysis, laryngitis and pleurisy, will not be treated in this institution.

RITTER described a similar institution which has been opened in Geesthacht, also for incipient and presumably curable cases. The period of cure is three months, and at its end, a free journey is to be given to poor convalescents.

SOCIETY PROCEEDINGS.

NEW YORK COUNTY MEDICAL SOCIETY.

Stated Meeting, Held Monday, April 24, 1899.

THE President, DR. S. O. VANDERPOEL, in the Chair.
The first paper of the evening, by DR. J. E. STUB-

BERT of Liberty, Sullivan County, N. Y., was entitled
SOME AUXILIARIES TO THE CLIMATIC TREATMENT OF
PHTHISIS.

Dr. Stubbert said that we have about given up thinking that there are specifics for pulmonary tuberculosis. Creosote, which was the last remedy lauded in this respect, has proved to be a good cough medicine but scarcely more. As the result of the giving up of faith in drugs has come a misplaced confidence in climate alone with a resolve to keep away from doctors, but this is an error in the opposite direction since medical treatment can do a great deal. Climate alone will benefit incipient cases, but comparatively few incipient cases come for treatment.

Especially is treatment important for the complications of tuberculosis. Of the cases treated at Liberty more than 400 have had complications. The majority of these have been in the throat, nose, and pharynx. The chronic congestion induced by these irritative conditions can scarcely fail to react unfavorably upon the tubercular process in the lung. When promptly and persistently treated, too, these lesions may be arrested before ulceration has taken place. It is a conservative estimate to say that twenty-five per cent. of consumptives have some laryngeal tuberculosis while a large number have lesions in the pharynx or nose. For these conditions local treatment is indispensable. Albolene sprays should be employed, or Dobell's solution with occasional applications of lactic acid or of nitrate of silver. Tags of hypertrophic tissue give way to applications of suprarenal capsules.

For the successful local treatment of these tuberculous conditions in the nose and throat time and patience are necessary. In the larynx especially is improvement slow. In a recent case Dr. Stubbert had under his care, in which there was loss of voice, steady treatment was kept up for over eight months and improvement, especially at the beginning, was very tardy, but the patient is now practically well and has completely recovered her voice.

Anemia is a very common complication of tuberculosis, especially in the incipient stage. For this the stimulant effect of high altitudes upon the blood-making organs, and the constitutional effect of plenty of fresh air are the best remedies. At Liberty static electricity has given excellent results in anemia, better than any other single method of treatment. There is marked improvement usually manifested under its use, especially in cases complicated by neurotic conditions. An hour in the ozone-room and contact with the negative electrode, or a sé-ance on an insulated stool always favorably affects such cases.

The ideal diet for tuberculous patients is to have them take three substantial meals a day. Gastro-intestinal disturbance not infrequently prevents this. It is probable that chronic gastritis with dilatation of the stomach is sometimes an etiological factor in the production of the lowered state of resistive vitality that has permitted the successful implantation of the tubercle bacillus. These conditions should be treated by accepted methods and Dr. Stubbert has found lavage and Einhorn's intraventricular electrode of special service. When tuberculous

patients suffer from biliousness a cathartic dose of calomel will be of service.

Dr. Stubbett has made a very satisfactory trial at Liberty of the antitubercle serum manufactured by the United States Government and has been pleased with the results obtained. It is of good service, especially in incipient cases, but seems to be contraindicated in advanced cases. It is better than creosote and a certain immunity to the disease seems to be established in patients who recover under its use, so that despite the fact that they go back to live under unfavorable circumstances relapses do not occur. Antistreptococcic serum seems to be indicated in certain cases, though they are not numerous and are mainly such as high altitude affects favorably by stopping the ravages of mixed infection.

A remedy that has given excellent results in Dr. Stubbett's hands is ichthyol in large doses—doses so large that they pass through the stomach practically unchanged. Thirty grains three times a day is given unless diarrhea or vomiting intervenes or the persistent taste of ichthyol in the mouth takes away the appetite. There is a marked gain in weight under this treatment and a general feeling of improvement. The sputum soon grows less and changes in color from green to yellow. From fetid and purulent the expectoration becomes mucous and frothy, and the pyogenic membrane becomes mucus-secreting once more. A cessation of the remedy too soon, *i. e.*, before certain changes have taken place in the lungs leads to a return of the old characters of the sputum. Of fifty-one patients treated by ichthyol 14 per cent. were cured, 55 per cent. improved, 19 per cent. were unimproved, and 12 per cent. died.

Another drug that has given good satisfaction is kolagra. Results with it were comparable to those obtained with ichthyol. The drug has been introduced from South America, where the native Indians had learned its virtues in pulmonary tuberculosis and had taken advantage of them. The Indians noticed long ago that cattle suffering from consumption, when allowed to wander off because no longer considered worth the caring for, often returned after some time, sleek and fat and entirely cured. It was noted that they ate this plant especially, so the hint was taken. It is antiseptic in its action, and under its use Dr. Stubbett has seen tubercular infiltration of the larynx disappear. It is given in doses of $\frac{1}{4}$ to 1 c.c. The subjective symptoms very soon improve and the bacilli become less. For its prompt effect in changing the character of the sputum to a mucous, frothy secretion instead of a greenish purulent liquid it deserves to rank with ichthyol and creosote.

In discussion DR. E. LE FEVRE said that in the matter of treatment a sharp distinction should be drawn, especially between the two most usual forms of reaction of the organism affected by the tubercle bacillus. In one class of cases there is a connective-tissue overgrowth and very little destruction of tissue. The organism protects itself by encapsulating the bacilli. In a second class there is marked destruction of tissue, and the organism tries to eliminate in the material thrown off the invading micro-organism.

There is a hopeful field in medical treatment without climate and one of the important elements of it is attention to the auxiliaries mentioned by Dr. Stubbett. Especially is attention to the upper air passages necessary. Inflammatory conditions here set up pulmonary reflexes which lessen respiratory movement. There is imperfect inspiration that fails to fill the edges of the lungs, and a lagging respiration that predisposes to the invasion of the tubercle bacillus.

DR. S. A. KNOPF said that respiratory exercises increase the vital capacity of the lungs and act as a general stimulant. The number of blood-corpuscles increase and the oxygenation of the system is greatly facilitated. Lung exercises might be used every hour according to the patient's condition and are a most helpful remedy. Hydrotherapy is also of great value. A douche on the apices serves as a precious stimulant to metabolism here, which aids in the cure of diseased processes. The general spray is a good systemic stimulant and when a spray is directed frequently to points where old pleuritic adhesions exist the tendency to painful uneasiness at these points decreases and the adhesions gradually loosen, permitting freer play of the lungs.

As to serum he thought that while it may have a value in the treatment of tuberculosis, that value is not yet sufficiently determined to enable us to make any public announcement as to its effect.

In conclusion, Dr. Stubbett said that he is not an advocate of kolagra or of ichthyol or of the serum treatment, but that he is an advocate of a fair trial of remedies that come to us highly recommended by others. Our remedies for tuberculosis up to this are so ineffective that this open state of mind is the only rationally defensible one. Kolagra has come to us authenticated by the President of the United States of Columbia, and good results seem certainly to follow its use. The serum is supplied by our own Government and theoretically, at least, would seem to be indicated. Personally he has not seen relapses after its use and knows of none. He is not an advocate of particular new remedies but of judicious investigation of the good they may do.

The second paper of the evening was read by DR. W. M. LESZYNSKY and was entitled

SOME OF THE ESSENTIAL FEATURES IN THE DIAGNOSIS AND TREATMENT OF SO-CALLED IDIOPATHIC EPILEPSY.

He said in brief: Epilepsy occurring without any recognizable cause in the skull or its contents is not a very uncommon condition. It is absolutely unamenable to surgical treatment and we have to depend on the medical management of the case. In dispensary practice with homes in tenement-houses it is extremely difficult to make any treatment successful. For such patients the best thing is living in a colony for epileptics. Craig Colony is already doing excellent work in this line, but already they are pressed for room and applicants must wait their turn. The institution eminently deserves the State aid it asks and the profession and the County Medical Society in particular should use their influence to obtain it.

The diagnosis of epilepsy is not difficult if an attack is

seen. The descriptions of non-medical friends are, however, very unsatisfactory, and very little reliance can be placed on the patient's own account of his seizures. Uremic attacks have caused mistakes, but should not if the heart and urine are carefully examined. A good deal of stress is laid on the differentiation of hysteria and epilepsy, but it must not be forgotten that hysterical symptoms may complicate genuine attacks of epilepsy, and that attacks of both may alternate for some time.

Sometimes the attacks may be so slight as to attract not very much attention even from the patient himself, or may occur during sleep and so remain latent for a long time. An actor who finally had to give up his profession because of frequently recurring attacks of petit mal, in which he forgot his lines and part and talked gibberish for a few minutes, proved on careful inquiry to have been having a series of attacks of grand mal at night for years which had remained unrecognized.

One of the fruitful sources of nervous reflexes that should always be carefully attended to in epileptic patients is the eyes. Suitable glasses should always be fitted whenever there is any error of refraction. For a time exaggerated claims were made for the curative effect of the correction of errors in ocular muscle balance, but these claims have not been substantiated. Correct the refractive errors rather than the muscular anomalies. The removal of uterine appendages in women was tried in some cases for epilepsy years ago, but the proceeding has now no supporters. Intestinal auto-intoxication undoubtedly plays a rôle in increasing the number and severity of epileptic seizures. Epileptics are habitually bolters of their food, and digestive disturbances are almost the rule. Dr. Herter has shown that intestinal toxins are excreted in the urine in greater abundance just before an attack showing there are more of them in the system. The acute infectious fevers often make the epileptic condition worse, and so do traumatic or surgical infections.

The first rule is to improve the general condition. That bromid is necessary whenever epileptic attacks occur is a mistake. If there are but three attacks a year, for instance, it is extremely inadvisable to keep the patients under the constant use of the bromid. Rather seek out the immediate cause or occasion of the attacks, and if possible influence that. Give the smallest dose of bromid that will keep the attacks under control. Arsenic may be added to prevent the occurrence of acne, and care of the skin will do much to keep off cutaneous reactions to the drug. Sudden withdrawal of the bromids after they have been taken for some time in any amount should be advised against as it has been known to produce the status epilepticus.

AMERICAN GYNECOLOGICAL SOCIETY.

Twenty fourth Annual Meeting, Held at Philadelphia, Pa., May 23, 24, and 25, 1899.

FIRST DAY—MAY 23D.

DR. DUER of Philadelphia, in a few well-chosen remarks, bid welcome to Philadelphia to the members and guests of the Gynecological Society, which has been the

American parent of all advances in this branch of medicine and whose proceedings have had direct effect on the welfare of the women of every land. It has the approval of the whole world and has been the court of last resort for all mooted questions, setting the seal of approval or disapproval on all papers read before it. It is the sponsor of modern gynecology and many things that were a question on its foundation are not a question now. It was the earnest wish of all that this meeting should equal its predecessors in the brilliancy of its papers and discussions, and on behalf of the medical men of Philadelphia he extended a most cordial welcome to all.

DR. HUNTER ROBB of Cleveland read a paper, entitled "Sixty-five Consecutive Abdominal Sections without a Death; with Clinical and Pathological Reports," and said: Perhaps more can be learned from our failures than from any number of successes, but still much can be learned from success and from a careful macroscopic and microscopic study of the sections removed. There are three most important factors of success: (1) Careful operative technic. (2) Preparation of the patient. (3) Operative skill.

There should be a thorough organization of the staff that is to assist at the operation, each assistant thoroughly understanding his or her particular duties, and all should work together harmoniously. The first assistant should assist the operator directly, the second having charge of the instruments and handing them to the operator or first assistant as needed. The third assistant takes charge of the dressings, and makes any cultures or cover-slip preparations that are desired. The fourth assistant devotes all his attention to the giving of the anesthetic, while the nurses watch and are ready to be of service when called upon. Of course the most thorough asepsis of dressings, instruments, pads, the field of operation, and the operator and his assistants' hands is carried out in the usual manner.

The patient should be under observation for several days previous to the operation, and a thorough study of the excretions should be made. A careful physical examination should also be made, and the blood before and after the operation carefully studied. The patient's general condition should be improved as much as possible before the operation. Rubber gloves, sleeves, and skull caps, should be used by the operator and his assistants during all operations, for by their use the danger of infection is materially lessened. The sponges are best made of pads of gauze, thoroughly sterilized, which is a much easier proceeding in this case than when sea sponges are used. About 500 c.c. of hot sterilized normal salt solution should be used to flush out the abdominal cavity at the conclusion of the operation, and then about 500 c.c. or less should be allowed to remain in the cavity. When drainage is necessary it is best accomplished by means of a gauze drain.

The patient after the operation should be put to bed in the postural position, as in that position drainage is best obtained. Shock should be combated by hypodermic injections of strychnin and enematas of hot coffee. If thirst be extreme the patient may be given a few sips of

hot water, or this failing, an enemata of hot water should be administered. No morphin should be given unless there be a special indication for its use. The bowels should be opened on the second day by a moderate dose of calomel followed in two hours by an enema of glycerin and soapsuds. Unless the patient pass her urine voluntarily she should be catheterized every eight or ten hours. The postural position should be maintained at least for the first ten hours but should there be much pain or restlessness, the patient may be moved on her side for ten minutes and then the postural position be resumed. Should the tympanitis be extreme, a rectal tube should be passed, this failing, an enema of turpentine, sweet oil, and water should be administered. Turpentine stupes should also be given a fair trial.

The clinical and pathological report of sixty-five sections may be condensed as follows: The oldest patient was aged fifty-seven years, the youngest seventeen, and the average thirty-one years. Fifty-three were married, 16 were single, while 6 were widowed. The chief clinical symptoms were pain in the lower part of the back in 54 cases, backache in 30, dysmenorrhea in 40, and leucorrhoea in 19 cases. In 2 of the latter it was of specific origin. There was menorrhagia in 19 cases and metrorrhagia in 1 case. Frequent and painful micturition was present in 6 cases, and irregular menstruation in 19 cases, being scanty in 2 cases. An organic lesion of the heart was present in 3 cases. Dyspareunia was present in 1 case.

The longest time of anesthesia was three hours and fifteen minutes, the shortest time was one hour and twenty minutes, the average time being two hours and nine minutes. The longest operation occupied two hours and fifty minutes, the shortest thirty-nine minutes, while the average time was one hour and thirty-eight minutes. In every case the abdominal cavity was thoroughly irrigated with a hot normal salt solution. In only one case was drainage necessary, and then a strip of sterile gauze was used.

DR. CHARLES P. NOBLE of Philadelphia opened the discussion by saying that the technic used by Dr. Robb was the same as that generally used throughout this country. The postural position after filling the abdomen with hot salt solution, is an admirable addition to our means of treatment, and is especially valuable in pus cases. In a very large private and hospital experience no bad results have followed. The glass drain has now been given up as a routine procedure, most cases requiring no drainage at all, still it is a great question whether gauze is a better drain than the old-fashioned glass tube. The only use for the gauze drain is when injury to the bowel or gall-bladder has occurred, or when there is extensive hemorrhage. He is opposed to the teaching that gauze is the very best drain. It would seem that often it acts as a dam, preventing the discharge of serum, etc., which would otherwise have taken place. There seems to be no objection to the use of opium in these cases. His patients are given half a grain hypodermatically of phosphate of codein *ad libitum*. In not one case has any bad result followed its exhibition.

Eternal vigilance should be the watchword in these cases, and they cannot be watched too closely. Sponges would seem to be better than gauze pads. They are cheaper, and by their use it is much easier to thoroughly dry the field of operation. In every way they would seem to be more satisfactory. The rubber gloves are more useful when the hands of the operator have been in contact with suspicious cases, but they should be used always, for the operator never knows when his hands are not surgically clean, and after a little practice one can operate quite as well with them on as off, except that it is more difficult to handle and manipulate intestines when they are used.

DR. J. MONTGOMERY BALDY of Philadelphia said that there was a time when he never used morphin in these cases, but now he uses it whenever the patient is restless during the night after the operation. The good that has followed its use at this time cannot be overestimated. The bowels, as a rule, are not opened before twenty-four hours after the operation and by that time the effects of the morphin will have entirely passed away. Gauze is most valuable to drain serum, but it will not drain blood and at the best it is absolutely uncertain. With a gauze drain it is absolutely impossible to see an intra-abdominal hemorrhage, while if a glass tube be used the presence of the blood is manifested at once. The use of normal salt solution in these cases is by no means of recent origin and is most valuable in nearly all cases. There is nothing better for absorption than the thorough use of the sterile sea-sponge. They are dangerous if not properly prepared, but if they be thoroughly washed and then sterilized they are much better than the gauze pad. The rubber glove does not seem to be so useful for the reason that it spoils the tactile sense. It should only be used in cases of absolute necessity; that is, after the operator has been with a badly infected case and then has to operate on a clean one.

DR. J. E. JANVRIN of New York said that hot saline solutions were used thirty years ago by Dr. Peaslee and that the credit for being the first to use them should go to this American surgeon.

DR. A. P. DUDLEY of New York said that to his mind it is a great question as to whether or not gauze is a true drain, and it would seem that it is not, as it will not act as a true drain through an abdominal incision. On the other hand, it is a most excellent drain when it is used by way of the vagina. The gauze should be left in place for five days because during the first few days it clings closely to the peritoneum and intestines and should not be drawn out while still held in this fibrin attachment. It is not possible to drain up hill which is what one does when an attempt is made to drain through an abdominal incision by a piece of gauze. It is most valuable in drainage by the vagina, allowing no air to enter the abdominal cavity, as often happens when the rubber drainage-tube is used.

DR. WATHEN of Louisville said that he generally operated through Douglas' cul-de-sac in preference to the suprapubic route. He finds it possible to remove everything by this route, and has not had a single death, and

every patient made an uninterrupted recovery. He generally employs gauze for drainage and finds it answers its purpose perfectly, especially so when the gauze is encased in a gum tube. In the majority of cases there is no need for a laparotomy, as everything can be removed per vaginam. The drainage is better, the time of operation is shorter, the danger of tearing the bowel is less, and the patients make a better and quicker recovery. In no case is there any indication for the use of rubber gloves as by the ordinary methods the hands can be made perfectly aseptic.

DR. LAPHORN SMITH of Montreal said that he uses opium in every case in which there is restlessness during the first night after operation. The use of salt solution is a most valuable adjunct, and in three or four cases life has been saved by its use. It is especially valuable in those cases in which large tumors have been removed. In most cases drainage is not necessary after laparotomy, but if there is a direct indication for its employment it should be done per vaginam. When gauze had been used as a drain through the abdominal incision in three pus cases it was found to be useless, as in a very short time it not only did not drain, but dammed back fluids which otherwise would have made their escape. There is strong evidence in favor of the use of a rubber drainage-tube through Douglas' cul-de-sac, packing the vagina around the end of the tube with sterile absorbent gauze.

DR. BOUVE stated that he considered normal salt solution to be of distinct advantage in these cases. The preoperative treatment is a great drain upon the patients, the light diet and purgation causing the loss of much fluid, so that loss is made up by the salt solution, which also tends to relieve thirst, which is often the most distressing symptom after operation. The rubber gloves are a most valuable addition and help to the surgeon, as it is nearly impossible to make the hands absolutely sterile, and then to keep them so during the operation. They are made of the only material that is absolutely impermeable, and they should be used in every operation.

DR. J. RIDDLE GOFFE of New York said that he thought the after-treatment of these cases was most important, and that they cannot be watched too closely. It is most important that the patient be kept as comfortable as possible. She should be placed in any position agreeable to her just as soon as she is out of her anesthetic. If she becomes restless in any one position she should be changed at once, and if necessary, a hypodermic of morphia should be administered, and if there be an indication it should be repeated. By frequently changing the patient's position she is made perfectly comfortable, and so in many cases the use of opium is avoided.

DR. ROBB closed the discussion by saying that the salt solution tends to decrease the thirst, and is most valuable in the after-treatment. After a long experience he has found that gauze drains act quite as well as does the glass tube. The glass tube, as a rule, is usually filled with bacteria, and certainly causes much more trauma to the abdominal contents. As a rule, even in bad pus

cases, a drain is not required for the reason that in nearly all cases this pus is sterile and absolutely free from micro-organisms. In eighteen cases of pyosalpinx in which there was abundant quantities of pus, the abdominal incision was closed up without drainage, and the patients made an uninterrupted recovery. Simply because pus is present is not an absolute indication for drainage. In nearly all cases this pus is sterile, but it is a good general rule to use rubber gloves and sleeves as they can be rendered absolutely aseptic, which is very difficult and often impossible in the case of the hands and arms. If virulent organisms be present in a pus case, it does not matter how much drainage you put in, the patient cannot be saved. The whole abdomen may be filled with drainage-tubes and be constantly irrigated, yet the result is the same. The hot salt solution is valuable in that it lessens toxicity of any micro-organisms that might be present and tends to relieve the thirst. The postural position is the best, as in that position drainage seems to go on better. The use of morphia as a routine treatment is not wise, other things being tried first. The deodorized tincture of opium was tried in many cases and proved most valuable. As it is so hard to properly sterilize sea sponges it would seem that gauze sponges are the best, as they can be rendered perfectly sterile, and are in reality not more expensive than sponges. One of the chief advantages of the gauze pad is that they can be made of any size desired, intestines can be walled off much easier in those cases in which they are used, and the operative technic thereby simplified.

DR. CHARLES P. NOBLE of Philadelphia then read a paper, entitled "Early Abdominal Sections for Fibroid Tumors, with a Tabulated List of All Operations Prior to 1865," in which he went very fully into the early history of this operation. In the majority of cases the operation was attempted after an error in diagnosis, the operator believing that he had to deal with some form of ovarian tumor, and when he discovered his mistake, abandoned further operative interference. In 1842 Charles Clay of Manchester did a supravaginal myomectomy but the patient died of hemorrhage. In 1844 Clay performed a total extirpation of the uterus, but the patient unfortunately died as the result of a fall. In 1863 Clay successfully performed a supravaginal amputation of the uterus.

(To be Continued.)

THERAPEUTIC HINTS.

Formula for Phospho-Chlorid of Calcium and Guaiacol.—

B a.	Calcii phosphat.	. . . . .	ii
	Ac. hydrochlorici	. . . . .	ii 3 ii
	Aq. dest.	. . . . .	iv.
B b.	Bals. toluani	. . . . .	3 ss
	Spiritus	. . . . .	3 iiss.
	Aque	aa	
B c.	Guaiacol	. . . . .	3 iiss
	Glycerini	. . . . .	v
	Syr. simplicis	. . . . .	iii
	Rum	. . . . .	i
	Sherry	. . . . .	ii.

Mix a. b. c., allow it to stand 5 or 6 days and filter.

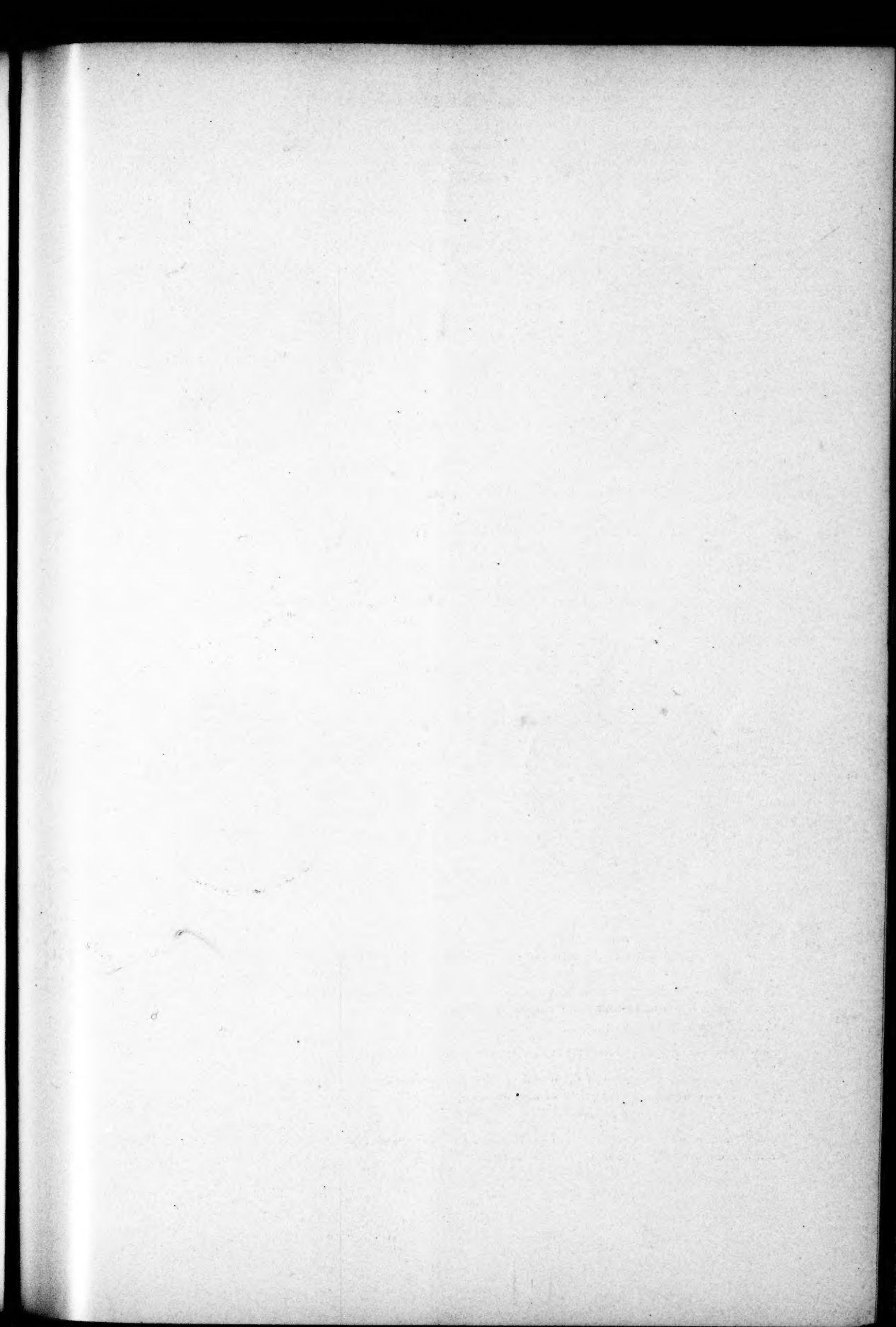


Fig. I.



Fig. II.

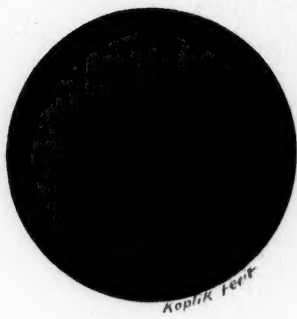


Fig. III.

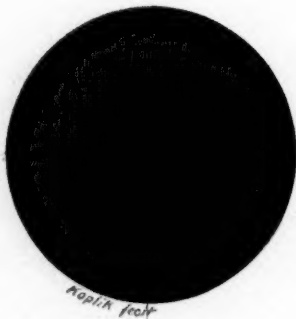
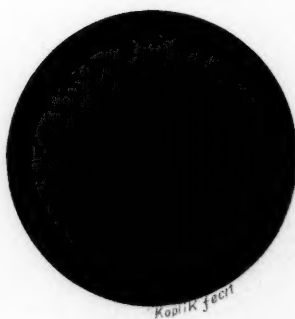


Fig. IV.



The Pathognomonic Sign of Measles (Koplik's Spots).

FIG. 1.—The discrete measles spots on the buccal or labial mucous membrane, showing the isolated rose-red spot, with the minute bluish-white centre, on the normally colored mucous membrane.

FIG. 2.—Shows the partially diffuse eruption on the mucous membrane of the cheeks and lips; patches of pale pink interspersed among rose-red patches, the latter showing numerous pale bluish-white spots.

FIG. 3.—The appearance of the buccal or labial mucous membrane when the measles spots completely coalesce and give a diffuse redness, with the myriads of bluish-white specks. The exanthema on the skin is at this time generally fully developed.

FIG. 4.—Aphthous stomatitis apt to be mistaken for measles spots. Mucous membrane normal in line. Minute yellow points are surrounded by a red area. Always discrete.